



Corporate report

on Environmental and Social Action Plan

**of the “Central - Asian Electric
Power Corporation”, JSC**

for 2015

Almaty, 2016

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The report of the “Central Asian Electric Power Corporation” JSC (hereinafter referred to as “CAEPCO” JSC) is developed according to the Environmental and social action plan (hereinafter referred to as ESAP), elaborated within the investment program, following the European Bank for Reconstruction and Development’s (EBRD) policy on environmental protection of the EBRD-financed projects.

“CAEPCO” JSC (hereinafter referred to as the Company) is a vertically integrated energy holding company, represented by the power plants in Pavlodar and North Kazakhstan oblasts, covering all the electricity supply processes - generation, transmission and distribution, and sales company in Astana.

The Company is constituted by:

1. The “PAVLODARENERGO” JSC’s (hereinafter referred to as “PE” JSC) group of companies, namely the “Pavlodar Regional Electric Distribution Company” JSC (hereinafter referred to as “PREDC” JSC), “Pavlodar Heating Networks” LLP (hereinafter referred to as “PHN” PELLP), “Pavlodarenergosbyt” LLP (hereinafter referred to as “PEsbyt” LLP).
2. The “SEVKAZENERGO” JSC’s (hereinafter referred to as “SKE” JSC) group of companies, namely the “North Kazakhstan Regional Electric Distribution Company” JSC (hereinafter referred to as “NKREDC” LLP), “Petrovsk Heating Networks” LLP (hereinafter referred to as “PHN” LLP), “Sevkazenergosbyt” LLP (hereinafter referred to as “SKesbyt” LLP).

1. The Environmental policy and concepts of environmental activities of the Company

Environmental protection is one of the key priorities declared by the Company in its Strategic development program. Environmental pollution prevention focus determines all operational decisions in the course of electricity and heat production. Environmental pollution is easier to prevent than eliminate. All new technologies are examined in terms of their environmental impact and natural resources utilization effectiveness.

In connection with the implementation of an energy management system and with the aim to improve the integrated management system the common Quality Policy was approved in 2015, in a field of quality, environmental protection, occupational health and safety, energy management system in JSC "PAVLODARENERGO" (06.09.2015), and reinstated Policy of "SEVKAZENERGO" (03.05.15) in the field of quality, environment, occupational safety and labor protection. The Policy complies with the Environmental safety concept of the Republic of Kazakhstan for 2004-2015, Environmental Code and ISO 14001 standards, and is based on the tasks set by the Environmental and social action plan.

The common policy was taught at the Company's entities through acknowledgement forms, Company's web-sites, and field newspapers. Policy is displayed on all divisions' information boards.

The Company is focused on doing its best to prevent negative environmental impact, and implement methods complying with the ISO 14001 international standard.

The following are fundamental principles of the environmental policy:

- recognition of the constitutional human right on healthy environment;
- recognition of the environmental safety priority as a part of national safety;
- focus on environmental safety and principles of the environmental management in the course of the economic strategy development;
- energy saving and sustainable utilization of natural resources and energy at all stages of electricity and heat production;
- reduction of emissions and wastes from electricity and heat production, and their environmentally compatible treatment;
- carrying out activities on reducing and preventing accidents, as well as minimizing their negative environmental impact;
- availability and accessibility of environmental information, immediate notification of all stakeholders on the accidents, their environmental impact, and recovery measures;
- availability and accessibility of the environmental monitoring results;
- involvement of the Company's entities' personnel in environmental activities through the environmental education programs development and improvement; making all employees follow safety requirements, environmental regulations and standards, designed for compliance with the Environmental policy and efficient environmental performance;
- compliance with the law of the Republic of Kazakhstan, international ISO 9001, ISO 14001, OHSAS 18001, ISO 17025 and ISO 5001 standards;
- availability and accessibility to all stakeholders of the information on the quality management activities and outcomes, including present policy;
- preserving the management systems' completeness and integrity when planning and implementing any management changes;

- promulgation among the personnel of the documents, developed within the integrated management system, continuous training of the Company's personnel on its performance complying with the Policy and settled procedures.

The Company's top management undertakes liability for implementing the stated environmental policy and supporting the environmental management system.

1. The Company runs its environmental activities in the following directions:

- the atmosphere monitoring, as of:
 - Monitoring the operating efficiency of gas-and-dust purifying equipment and compliance with established emission rates;
 - Monitoring the atmospheric contamination level on the border of sanitary protection zones (hereinafter SPZ) of entities and ash dumps;
 - Monitoring the hazardous substances content in the entities' emissions;
 - Monitoring the instrument measurements quality;
- water resources monitoring, as of:
 - Monitoring the underground water pollution at the Company's industrial sites and on the borders of SPZs of the ash dumps;
- soil, land resources and production wastes monitoring, as of:
 - Monitoring the soil contamination level in the area of the Company's industrial sites and ash dumps;
 - Monitoring of generation, utilization and disposal of production and consumption wastes;
- engineering and planning environmental activities;
- monitoring implementation of the environmental activities;
- assessing the level of impact on environmental components;
- minimizing the impact of the entities' production processes on environment and human health;
- increasing the level of the entities' top managers and employees' environmental knowledge and responsibility;
- increasing production and environmental efficiency of the environmental management system;
- implementing ISO 14001 requirements.

2. Registration of environmental emissions, industrial analysis of the environmental compliance monitoring data, submission of the industrial environmental control data.

3. Internal inspections. Implementation of preventive and corrective measures on eliminating the environmental law violation cases.

4. Analysis of the Company's environmental activities (hereinafter EA) and environmental efficiency of the entities' management system.

2. Standards of environmental and social activities of the Company

“PAVLODARENERGO” JSC

The certification agency (TÜV Rheinland Inter Cert) conducted the surveillance audit of the energy management in compliance with international standards of ISO 50001:2011, re-certification audit of the quality and environmental management systems' compliance with the ISO 9001:2008 and ISO 14001:2004 standards, and first compliance audit of occupational health and safety management system's compliance with the OHSAS 18001:2007 international standard.

Upon completion of the audits, the following ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007 certificates were validated certified by MS ISO 50001:2011:

- ISO 9001 Quality Management Certificate, registration # 011001321810, valid from 03.10.2015 to 02.10.2018;
- ISO 14001 Environmental Management Certificate, registration # 011041321810, valid from 21.12.2015 to 20.12.2018;
- OHSAS 18001 Occupational Health and Safety Management Certificate, registration # OC-4870-0020, valid from 23.01.2015 to 22.01.2018;
- Energy Management Certificate of ISO 50001: 2011, registration # 014071321810, valid from 12.11.2015 to 11.11.2018.

“Pavlodar Regional Electric Distribution Company” JSC

The certification agency (TÜV Rheinland Inter Cert) conducted the re-certification audit of the quality and environmental management systems' and occupational health and safety management systems' in compliance with ISO 9001: 2008 and ISO 14001: 2004 and OHSAS 18001: 2007.

Upon completion of the audits, the following ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007 certificates were validated:

- ISO 9001:2008 Quality Management Certificate, registration # 01 100 1319426, valid from 29.06.2015 to 28.06.2018;
- ISO 14001:2004 Environmental Management Certificate, registration # 01 104 1319426, valid from 23.05.2015 to 22.05.2018;
- OHSAS 18001:2007 Occupational Health and Safety Management Certificate, registration # OC-4870-0024, valid from 29.06.2015 to 28.06.2018.

“Pavlodar Heating Networks” LLP

The certification agency (TÜV Rheinland Inter Cert) conducted the first re-certification audit of the quality and environmental management systems', and occupational health and safety management system's in compliance with the ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007 standards.

Upon completion of the audits, the following ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007 certificates were issued:

- ISO 9001 Quality Management Certificate, registration # 01 100 1319414, valid from 09.08.2015 to 08.08.2018;
- ISO 14001 Environmental Management Certificate, registration # 01 104 1319414, valid from 05.04.2015 to 04.04.2018
- OHSAS 18001:2007 Occupational Health and Safety Management Certificate, registration # OC-4870-0028, valid from 05.04.2015 to 04.04.2018.

“SEVKAZENERGO” JSC

The certification agency (TÜV Rheinland Inter Cert) conducted first surveillance audit of the quality, environmental management systems', occupational health and safety management system's in compliance with the ISO 9001:2008, ISO 14001:200, OHSAS 18001:2007 international standards.

Upon completion of the audits, the following certificates were validated and extended duration of issued certificates:

- ISO 9001:2008 Quality Management Certificate registration # 011001321852, valid from 01.08.2014 to 31.07.2017;
- ISO 14001 Environmental Management Certificate registration # OC-4870-0043, valid from 19.12.2012 to 18.12.2015;
- OHSAS 18001:2007 Occupational Health and Safety Management Certificate registration # OC-4870-0010, valid from 01.08.2014 to 31.07.2017;
- Energy Management Certificate of ISO 50001: 2011, registration # 01 407 1321852, valid from 28.01.2014 to 27.01.2017.

“North Kazakhstan Regional Electric Distribution Company” JSC

The certification agency (TÜV Rheinland Inter Cert) conducted re-certification audit in compliance with the ISO 9001:2008, ISO 14001:200, OHSAS 18001:2007 and certification audit of the environmental management systems' in compliance with ISO 50001:2011.

Upon completion of the audits, the following certificates were validated and extended duration of issued certificates:

- ISO 9001:2008 Quality Management Certificate, registration # 01 100 1518811, valid from 22.09.2015 to 21.09.2018;
- ISO 14001:2004 Environmental Management Certificate, registration # 01 104 1518811, valid from 29.06.2015 to 28.06.2018;
- OHSAS 18001:2007 Occupational Health and Safety Management Certificate # OC-4870-0051, valid from 06.08.2015 to 05.08.2018.
- Energy Management Certificate of ISO 50001: 2011, registration # 01 407 1518811, valid from 25.08.2015 to 24.08.2018.

“Petrovsk Heating Networks”, LLP

The certification body (TÜV Rheinland Inter Cert) conducted re-certification audit of the environmental management systems', occupational health and safety management systems' compliance with the ISO 14001:2004 and OHSAS 18001:2007 international standards, recertification audit of compliance with ISO 9001:2008, and first compliance audit of compliance with ISO 50001:2011 international standards.

Upon completion of the audits, the following certificates were validated and extended duration of issued certificates:

- ISO 9001:2008 Quality Management Certificate # 011001321855, valid from 02.06.2014 to 19.06.2017;
- ISO 14001:2004 Environmental Management Certificate, registration # 01 104 1319414, valid from 08.08.2015 to 07.08.2018;
- OHSAS 18001:2007 Occupational Health and Safety Management Certificate # OC-4870-0037, valid from 08.07.2012 to 07.07.2018;
- ISO 50001:2011 Energy Management Certificate # 014071321855, valid from 28.05.2014 to 27.05.2017.

In accordance with the approved program, an internal audit was conducted at all the “CAEPCO” JSC's subsidiaries. At the beginning of the year, achievement of the quality, environmental and

occupational health goals and objectives was analyzed. Based on the analysis outcomes, goals for the year were elaborated. Implementation of the Integrated management system (IMS) program was examined, development decisions were made.

3. Key environmental indicators of the Company for 2015

Environmental protection is a part of the Company's entities daily activities. The Company's entities keep records of the air pollutant emissions and wastes, generated in the course of production routine.

3.1. Hazardous emissions into the atmosphere

The Company's 2015-data by the "PAVLODARENERGO" JSC and "SEVKAZENERGO" JSC's entities groups (tons)

Atmospheric emissions	"PE" JSC, total for 3 CHPs		"SKE" JSC (PCHP-2)		"CAEPCO" JSC	
	limit	actual	limit	actual	limit	actual
Total, as of:	69515	42544	47351	34158	116866	76702
Coal ash (non-organic dust 70-20% silica)	12735	8373	6471	4908	19206	13281
Nitrogen dioxide	11489	7042	5 697	5 510	17 186	12 552
Nitrogen oxide	1867	1145	925	895	2792	2040
Sulfur dioxide	40533	24698	29893	19147	70426	43845
Carbon monoxide	2855	1262	4 353	3 686	7 208	4 948
Other	36	24	12	12	48	36

Atmospheric emissions	TPP-2		CHP-3		Ekibastuz TPP		Total "PE"	
	limit	actual	limit	actual	limit	actual	limit	actual
Total, as of:	10604	8442	47599	26475	11312	7 627	69515	42544
Coal ash	1533	1286	8004	4823	3198	2264	12735	8373
Nitrogen dioxide	1914	1546	8254	4627	1321	869	11489	7042
Nitrogen oxide (Nox)	311	251	1341	753	215	141	1867	1145
Sulfur dioxide (SO ₂)	6467	5083	28284	15524	5782	4091	40533	24698
Carbon monoxide (CO)	370	270	1693	734	792	258	2855	1262
Other	9	6	22	14	5	4	36	24

Note: The air emissions volume, permitted by the Ministry of Environmental Protection, is indicated in the table above as Limit, whereas the actual emissions volume is indicated as Actual.

Reported data on the "PAVLODARENERGO" JSC's average annual emission concentrations for 2015 (mg/nm³).

Emissions concentration	Contents, mg/nm ³ for α=1,4					
	PE CHP-2		PE CHP-3		PE Ekibastuz TPP	
	MPE	Actual	MPE	Actual		
	MPE		Actual			

Coal ash	870	288	400	268	900	402
Nitrogen dioxide (Nox)	570	494	650	450	680	434
Sulfur dioxide (SO ₂)	2000	1014	2000	966	2000	960
Carbon monoxide (CO)	90	71	95	53	295	102

Reported data on the “SEVKAZENERGO” JSC’s emissions concentration for 2015 (mg/nm³)

Emission concentration	Content, mg/nm ³ for α=1,4	
	MPE	Actual
Coal ash	458	300
Nitrogen dioxide (Nox)	616	469
Sulfur dioxide (SO ₂)	2677	1678
Carbon monoxide (CO)	388	32

Reported data on the “CAEPCO” JSC’s electric distribution companies for 2015 by groups (tons)

Atmospheric emissions	“PREDC” JSC		“NKREDC” JSC		“CAEPCO” JSC, total	
	MPE	Actual	MPE	Actual	MPE	Actual
Total	23.606	5.802	14.74	12.32	38.346	18.122
Mineral oil	0.372	0.372	0.00	0.00	0.372	0.372
Nitrogen dioxide	0.290	0.037	0.14	0.11	0.43	0.147
Non-organic dust 70-20% silica	3.683	0.000	5.53	5.48	9.213	5.48
Sulfur dioxide	1.139	0.000	0.04	0.01	1.179	0.01
Carbon monoxide (CO)	5.724	0.046	0.38	0.22	6.104	0.266
Other	12.398	5.347	8.65	6.50	21.048	11.847

The total Company’s entities’ emissions volume in 2015 has not exceeded the maximum permissible emissions.

The “Pavlodar Heating Networks” LLP’s reported data for 2015 (tons)

Atmospheric emissions	Pavlodar Heating Networks		Ekibastuz Heating Networks		Pavlodar and Ekibastuz, total	
	Limit	Actual	Limit	Actual	Limit	Actual
Total, as of	1.366	1.366	1.942	1.942	3.308	3.308
Fluorochemicals	0.016	0.016	0.016	0.016	0.032	0.032
Nitrogen dioxide	0.120	0.120	0.159	0.159	0.279	0.279
Iron II oxide	0.629	0.629	0.238	0.238	0.867	0.867
Manganese and its compounds	0.050	0.050	0.014	0.014	0.064	0.064
Carbon monoxide (CO)	0.385	0.385	1.297	1.297	1.682	1.682
Other	0.166	0.166	0.218	0.218	0.385	0.385

The “Petropavlovsk Heating Networks” LLP’s reported data for 2015 (tons)

Atmospheric emissions	Petropavlovsk Heating Networks	
	Limit	Actual
Total, as of	1.721	1.721
Fluorochemicals	0.000	0.000
Nitrogen dioxide	0.052	0.052
Iron II oxide	0.185	0.185
Manganese and its compounds	0.011	0.011
Carbon monoxide (CO)	0.130	0.130
Other	1.343	1.343

3.2. Carbon dioxide (CO₂) emissions

Upon the Kyoto Protocol coming into force in the Republic of Kazakhstan on 17 September 2009, the Company began its preparation for the greenhouse gas emissions and ozone depleters consumption inventory routine.

The greenhouse gases are monitored on the basis of the accounting method, which enables the Company to take account of normal (regular) production routine, special practice (pre-commissioning, process break-down, repair and maintenance), and emergencies. The greenhouse emissions are calculated in conformity with administrative regulatory documents: Methodology guidelines on calculating the thermal electric power stations and boilers’ greenhouse gas emissions, Methodology guidelines on calculating the motor transport enterprises’ greenhouse gas emissions, Methodology guidelines on calculating the railway vehicles’ (both public and cargo) greenhouse gas emissions,. Regulations of the IPCC on the greenhouse gas national inventories, 2006. Vol. 2. Energy industry. Chapter 2. Stationary fuel combustion, mobile fuel combustion, Vol. 3. Industrial processes, and products consumption, Chapter 7. Emissions of the ozone-depleters’ fluorinated substances. The coal and fuel oil combustion emissions are assessed through the 3-level methods.

“PAVLODARENERGO” JSC

In 2015, “PAVLODARENERGO” JSC produced 3720.2 million kWh of electric energy and 4.4 million Gcal of heat energy. 3555.1 thousand tons of Ekibastuz coal and 5.6 thousand tons of fuel oil were used for the energy production purposes. 5266.7 tons of CO₂ were derived from the coal and fuel oil combustion processes in 2015 (inclusive of motor transportation, emissions related to the propan/butan mixes and cox combustion).

“SEVKAZENERGO” JSC

In 2015, “SEVKAZENERGO” JSC produced 2 809.138 million kWh of electric energy and 1.9 million Gcal of heat energy. 2 461.472 thousand tons of Ekibastuz coal and 3.2 thousand tons of Fuel oil were used for the energy production purposes. 3 845.023 tons of CO₂ were generated in 2015 (inclusive of motor transportation, and emissions related to the propan/butan mixes combustion). 3843.9 tons of CO₂ were derived from the coal and fuel oil combustion processes in 2015.

Greenhouse gas emissions in 2015

	CO ₂	CH ₄	N ₂ O	Perfluoro- carbons	Total
	greenhouse gas emissions quantity, expressed in CO ₂ , tons				
“PAVLODARENERGO” JSC, total, as of:	5 266 665	861	24 990	-	5 292 515
CHP-2	1 071 018	163	4 701	-	1 075 882
CHP-3	3 478 153	577	16 818	-	3 495 548
Ekibastuz CHP	717 494	121	3 471	-	721 086
“SEVKAZENERGO” JSC PCHP-2	3 845 023	855	8 777	-	3 854 655
“CAEPCO” JSC total	9 111 688	1716	33 767	-	9 147 170

3.3. Placement of ash slag emissions

Reported data on the volume of ash slag wastes, permitted and actual level, by the “PAVLODARENERGO”, “SEVKAZENERGO” JSCs’ entities groups in 2015, (tons)

Wastes	“PE” JSC		“SKE” JSC		“CAEPCO” JSC, total	
	Limit	Actual	Limit	Actual	Limit	Actual
Ash slag	2.051. 658	1.408. 228	1.287. 282	1.028. 964	3.338. 940	2.437.192

Including the “PAVLODARENERGO” JSC by CHPs (tons)

Wastes	CHP-2		CHP-3		Ekibastuz CHP	
	Limit	Actual	Limit	Actual	Limit	Actual
Ash slag	329. 327	279. 620	1. 442.169	939. 168	280. 162	189. 440

In 2015, The Company’s entities have not exceeded the maximum permissible ash slag wastes.

4. Compliance with environmental requirements

The “PAVLODARENERGO” and “SEVKAZENERGO” JSCs’ subsidiaries developed their environmental protection activities on maximum emissions reduction in order to meet the requirements of the Technical regulations, and minimize the industrial processes’ impact on environment and human health.

The Company completed integration of the improved flue gas purification system, covering replacement of the existing ash catchers, i.e. wet scrubbers, by superposed Venturi pipes of 97%-ash collecting efficiency, 99.5%-2nd-generation-battery emulsifiers for each 99.5%-efficiency-boiler. Modernization of the ash catchers resulted in decreasing coal ash concentration down to 250-300 mg/m³, and reducing sulfur oxides by 5-15% without any additives.

In order to minimize the production processes’ impact on environment and human health, environmental protection plan was developed and approved by the environmental protection authorities.

“PAVLODARENERGO” JSC (CHP-2, CHP-3, Ekibastuz CHP)

Developed and coordinated by the Ministry of Energy of the Republic of Kazakhstan the Environmental protection programs for 2015-2019 were developed for CHP-2, CHP-3 and PCHP, for the amount of 7.461.153.766 thousand tenge, of which 2015 – 4.052. 037 thousand tenge. Activities for the amount of 3.014.735.095 thousand tenge were implemented in 2015.

Key activities were:

- construction of a new ash dump at CHP-2 - costs made 1.013.015.3 thousand tenge;
- construction of the cooling tower №5 CHP-3 – cost amounted 570. 363.5 thousand tenge;
- construction of new Ash pond CHP-3- cost amounted 482. 264.9 thousand tenge;
- installation of automatic process control system (PCS) on boiler st. №2 CHP-3 cost amounted 304.502 thousand tenge;
- construction of a new section of the Ash pond CHP Ekibastuz in the Tuz Lake lodge – cost amounted 132 459.3 thousand tenge;
- repair of the CHP-3 sluice discharge pipes - costs made 28.824 thousand tenge;
- repair of heat insulation, bricking emulsifiers and flues, repair of ash catchers, work to maintain efficiency of ash catchers at the project level - costs amounted 20.072 thousand tenge;
- repair of heat insulation and lining of burners, burner repair - costs amounted 16.724 thousand tenge;
- inventory of emissions of greenhouse gases and ozone-depleting substances, the development of plants passports, monitoring programs, emission reduction programs for the CHP-2, CHP-3 and ECHP’s - costs made to 4 192.333 thousand tenge.

“Pavlodar Regional Electric Distribution Company” JSC

Environmental protection activities for 2013-2017 were developed and approved by the environmental protection authorities for the amount of 334. 042.5 thousand tenge in order to minimize the “PREDC” JSC’s industrial processes’ impact on environment and human health. 22 events have been planned for 2015 for the amount of 66.518.3 thousand tenge, of which 18 were implemented for the amount of 73.578.131 thousand tenge.

Key activities were:

- replacement of the oil switches by the vacuum ones - costs amounted 44.400 thousand tenge;
- the replacement of oil-filled power transformers to dry ones - costs made 25.000 thousand tenge;
- restoration of the urban area lands at the sites of the emergency recovery works at the cable within the technological processes reconstruction - costs made 1.500 thousand tenge;
- delivery of industrial waste (green and amber colors list), costs amounted 1239.95 thousand tenge;
- use of water resources and wastewater treatment - costs amounted 774.3 thousand tenge;
- switch-over from the furnace heating brigade vehicles to autonomous air heating, the costs amounted - 300 thousand tenge;
- replacing grinding and drilling machines to machines equipped with dust extraction costs totaled 200 thousand tenge;
- routine maintenance and repair of the suction installation and determination of the performance of ventilation systems, costs amounted - 70.38 thousand tenge;
- calibration devices and chemical laboratory equipment of ECEN (Eastern company of electric networks) - costs amounted 49.501 thousand tenge;
- landscaping enterprise and maintenance of existing green spaces - costs made 40.0 thousand tenge.

“Pavlodar Heating Network” LLP

Environmental protection activities for 2015 were developed and approved by the environmental protection authorities for the amount of 1.916 thousand tenge. In 2015, all planned actions were fully implemented for the amount of 1.803 thousand tenge.

Key activities were:

- sanitary cleaning of the central heat points’ (CHP) territories, main and sub-main networks (on the territories, attributed to the company) from garbage - costs made 1.070 thousand tenge;
- SNA (South Network Area): installation of water recycling, cooling water pumps bearings NS №1 - 500 thousand tenge;
- restoration of the landscaping after the current and capital repairs of district heating networks - 80 thousand tenge;
- restoration of the landscaping after the current and capital repairs of district heating networks - 70 thousand tenge;
- current repairs of ash extraction system - 25 thousand tenge;
- removal of dredge and surfs from the walls of the ventilation systems of stationary welding stations - 10 thousand tenge.

“SEVKAZENERGO” JSC

Environmental protection plan for 2014-2016 was developed and approved by the Environmental Regulation and Control Committee of the Ministry of Environment and Water Resources of the Republic of Kazakhstan for the amount of 10.065.600 thousand tenge. 19 environmental actions

were intended to be implemented in 2015 for the amount of 3.355.200 thousand tenge. All intended actions were fully implemented for the amount of 3.424.436 thousand tenge.

Key activities were:

- procurement of cutting-edge equipment, substitution and reconstruction of the main equipment, which serve for effective cleaning, utilization, neutralization, suppression and processing of polluting substances in gases, as well as dismantling of the old boiler of high concentration level of emissions in fuel gases – costs made 3.000.004 thousand tenge;
- dismantling and putting in operation of the 2nd-generation emulsifiers at the O/N station, serving for capturing and deactivation of polluting substances – costs made 98379.2 thousand tenge;
- waste recultivation of ash dumps- costs amounted 163.514 thousand tenge;
- the implementation of measures to reduce greenhouse gas emissions - costs amounted 105 238.4 thousand tenge;
- modernization of the water supply system, preventing water resources pollution and exhaustion: hydraulic-ash sluicing systems (HAS), run-around industrial, water recirculation systems – costs made 13696.186 thousand tenge;
- repair of the ash dump's dividing dam - costs amounted 9 451 thousand tenge;
- settlement of the wastes storage locations - costs made 10998.2 thousand tenge;
- organization of events, which aim to improve the quality of allocated water, increase the efficiency of wastewater treatment plants - costs made 4235.2 thousand tenge;
- audits of the environmental protection system in accordance with the integrated management system international standards – costs made 4800 thousand tenge;
- the development of environmental projects, verification and validation reports - costs amounted 5000 thousand tenge;
- repair worn-out parts of dust extraction plants - costs amounted 5510.6 thousand tenge;
- environmental projects development, reports verification and validation – costs made 2496 thousand tenge;
- organization of oil analysis by independent agency to check content of PCBs of newly acquired equipment - costs amounted 231.504 thousand tenge;
- work on dust suppression at the heat energy company and construction plant - the cost amounted 197.1 thousand tenge;
- organization places for storing of inventory and building materials - costs amounted 190.9 thousand tenge;
- landscaping businesses - costs amounted 219.4 thousand tenge;
- environmental training, attending seminars on environmental issues - costs amounted 99.7 thousand tenge;
- informing community on the company's environmental impact – costs made 15.1 thousand tenge;
- subscription to RK environmental periodicals -costs amounted 159.3 thousand tenge.

“North Kazakhstan Regional Electric Distribution Company” JSC

The company developed environmental protection activities for 2012-2016 for the amount of 1.266 thousand tenge, and had them approved by the Government entity "Department of Ecology of North Kazakhstan Region". 269 thousands tenge was planned in 2015 on

environmental measures. All activities are carried out in full scope for the amount of 436.92 thousand tenge.

Key activities were:

- dust collecting equipment repair, dust removal – costs made 10 thousand tenge;
- gardening and landscaping - costs amounted 419.8 thousand tenge;
- subscription for environmental periodicals – costs made 7.12 thousand tenge;

Additional activities:

- organization of oil analysis by independent agency (LLP “Ekoexpert”, Karaganda) to check content of PCBs in oils of existing equipment - costs amounted 12414 thousand tenge. As a result of the research the maximum permissible concentration of PCBs in samples of provided oil is not detected;
- disposal, dislocation, utilization of hazardous waste (municipal and industrial waste, on the basis of agreements concluded) - costs amounted 1 437.714 thousand tenge.

“Petropavlovsk Heating Networks” JSC

The company developed the environmental protection activities for 2015-2025, and had them approved by the Government entity "Ecology Department of the North-Kazakhstan region, Committee of environmental regulation, control and state inspection in oil and gas division of the Ministry of Energy of the Kazakhstan Republic" for the amount of 11.373 thousand tenge. All activities are carried out in full scope for the amount of 1.839 thousand tenge.

Key activities were:

- the second surveillance audit conducting in compliance to ISO 14001 - the cost amounted 1 805 thousand tenge;
- subscription to the "Ecological Courier Int» newspaper - costs amounted 7 thousand tenge;
- transportation and utilization of dangerous wastes (oil-soaked rags, mercury-containing lamps) – costs made 27 thousand tenge;

Additional activities:

- restoration of the landscaping after the current and capital repairs of district heating networks - costs amounted 36.598 thousand tenge;
- removal of municipal waste and industrial waste from green list - costs amounted 1 514 thousand tenge;
- control over the persistent organic pollutions’ (polychlorinated biphenyls) presence on the company’s territory, and, when necessary, their neutralization and liquidation – costs made 538 thousand tenge;
- removal and disposal of hazardous waste (waste sealant) – costs made 1 300 thousand tenge;
- environmental projects development – costs made 840 thousand tenge.

5. Implementation of environmental investment activities

The Company improves its environmental standards by dint of new ash dumps construction, flue gas purification systems modernization, and various activities on minimizing negative environmental impact. The Company's Investment program is focused on replacement of the old-fashioned equipment by a new one of best environmental characteristics.

“PAVLODARENERGO” JSC

Ash dumps construction (CHP-3, CHP-2, Ekibastuz CHP)

For the purposes of the stations' technological cycle continuity and ash-and-slag wastes storage within up to 25 years, the “PAVLODARENERGO” JSC the construction of ash dumps (2nd stage) CHP-2, CHP-3 was completed in 2015 and started the construction of the 2nd section of the Ash pond of the Ekibastuz power plant in Tuz Lake lodge one of the largest investment projects - the construction of new ash dumps of "PAVLODARENERGO" begun in 2009.

Ash pond is a facility for the disposal of industrial waste - ash, preventing ash and slag waste pollution and to ensure stable operation of the CHP.

In order to minimize negative environmental impact and achieve environmental goals, new ash dumps construction involves advanced underground waters protection method (CHP-2, CHP-3): ash storage bed and protective dams are covered by Canadian geomembrane liner, resistant to mechanical damages and temperature disturbances, which serves for their resistibility, long life cycle and environmental safety; besides, drainage, beaches irrigation and recycling water supply systems' exploitation are involved. Estimated cost of works at the CHP-3 ash dump amounts to 2.5 billion tenge, CHP-2 ash dump – 2.8 billion tenge, Ekibastuz ash dump – 1.3 billion tenge.

As part of the investment program JSC "PAVLODARENERGO" plans to introduce measures directed to modernization and automation of main and auxiliary equipment, improve the level of environmental standards which lead to reducing the negative impact of the JSC "PAVLODARENERGO" on the environment.

Installation of turbine unit PT-65 / 75-130 / 13 Station # 2 CHP-3

In order to increase the supply of electric and heat energy from the energy source CHP-3 , to meet the needs of existing and prospective customers, as well as improve the reliability of power supply, steam supply and heat supply the steam turbine PT-65/75-130/ 13 st.# 2 with modern automated process control system (PCS) commissioned in the July 2015. In connection with commissioning turbine # 2 installed electric capacity of CHP-3 increased by 5 MW and became 525 MW, respectively, the installed heat capacity increased by 72 Gcal/h and became 1098 Gcal/h. New UTZ turbine (2012Y) instead of the previously dismantled PT-60-130CHSSR Project 1970 will reduce the specific consumption of heat gross for 500-900 kWh / Gcal (depending on the operating mode of the turbine unit), thenafter will lead to reduction specific fuel equivalent consumption to 3-5 g/kWh, which ultimately helps to reduce harmful emissions into the atmosphere of the city.

Reconstruction of turbine unit T-100/120-130-3 st. #4 at CHP-3 with replacement of High Pressure Cylinder, Medium Pressure Cylinder and generator.

Reconstruction of turbine unit T-100/120-130-3 st. #4 at CHP-3 with replacement of HPC, MPC and generator was made in 2015. Modernization of turbine unit will provide increase in electrical capacity and efficiency due to the modernization of flow path. Installed capacity of turbine unit

#4 increased from 110 MW up to 125 MW after the reconstruction. Electrical and heat capacity gains by 15 MW and 28 Gcal/h respectively, installed electrical capacity of CHP-3 amounted to 540 MW, installed heat capacity amounted to 1126 Gcal/h.

Additional volume of electric power generation on annualized basis was 97.5 million with estimated number of production hours 6500 hour/year.

Reconstruction of turbine unit T-100/120-130-3 st. #4 at CHP-3 will reduce the per unit gross heat consumption by 500-900 kwh/Gcal, depending on the operating mode of the turbine unit, and respectively reduce per unit fuel rate consumption by 3-5 g/kWh, thereafter will lead to decrease in emissions into the atmosphere of the city. In November, 2015 turbine unit was commissioned.

Reconstruction of boiler unit BKZ-420-140 st.#2 with installation of automatic process control system at CHP-3

Reconstruction works on boiler unit BKZ-420-140 st.#2 with installation of automatic process control system was done in 2015. Main purpose of installation of automatic process control system on boiler unit is complete automation of combustion processes, provision of immediate, reliable and uninterrupted information on the state of the process to executives and management of CHP, improving of efficiency and safety of boiler unit operation and management efficiency of technological process of boiler unit, coal economy.

Installation of automatic process control system provides implementation of all requirements of the normative documents in the energy sphere, will lead to a significant expansion of system functionality, increase the level of reliability of process and automation equipment, reduction of labor costs for maintenance and repair, increase in efficiency of boiler unit by 5.2%, decrease in overrun in coal consumption by 34 407 tn/year, decrease in ash emissions by 72 tn/year, sulphur dioxide by 475 tn/year, ash output by 15 137 tn/year.

In December, 2015 boiler unit BKZ-420-140 st/#2 was commissioned.

Construction of the cooling tower №5 CHP-3

A long-term program of reconstruction and modernization of CHP-3 of "PAVLODARENERGO", JSC provides an installation of a new turbine PT-65/75-130-13 № 2 and phased approach of reconstruction of turbine units № 4, №5, №6 (T-100 / 110-130) with the capacity increase up to 125 MW. The cooling tower №5 surface of 1600 m² is to be installed to reduce the electrical power breaks in the summer, capable of the additional electrical load in condensing mode 50 MW.

Project implementation "Construction of a cooling tower №5 of CHP-3" for the period 2014-2015 (irrigation area – 1,600 m²), serving for reducing impact on the atmosphere around CHP-3 – first, through the drop entrainment decrease (does not exceed 0.005% of water consumption per cooling tower), second – through employment of polymeric materials, recommended for the cooling towers. Water catchers at the cooling tower serve for the drop entrainment almost 100%-reduction.

Project implementation "Construction of a cooling tower №5 of CHP-3" for the period 2014-2015. The use of polymeric materials in water distribution system and sprinkler that are resistant to temperatures up to 60° C, with high resistance to alkalis, acids, fats, lubricants, UV radiation that will reduce the impact on the air in the area of CHP-3. The blinds are provided to reduce the noise level during operation of the cooling tower (reduction of air inflow in the winter) that decreases the sound level by 2-3 dB. The use of polymeric sprinklers will also facilitate carrying the supporting frame structure under irrigation based on the weight of polymeric sprinklers. Technical solutions adopted in the working draft correspond to the best available technological

solutions in accordance with the European practice and Republic of Kazakhstan. Electric load CHP-3 in condensing mode has increased by 50 MW and amounted to 310 MW, the commissioning of the cooling tower №5 in the summer.

“SEVKAZENERGO” JSC

Activities on reducing negative environmental impact

- commissioning of the turbine unit №1 K-63-90 of Petropavlovsk CHP-2. As a result of modernization of the flow part of the turbine unit, the steam consumption in the production of electric energy reduced from 6 tonnes per MW to 4,098 tonnes per MW (by 1,996 tonnes / MW), and saved 2768 tonnes of coal during 3 months and reduced the amount of harmful emissions into the atmosphere;
- work on the reconstruction of boiler BKZ-220-100-4 №12 started in 2014 is in the process. The effect of reducing emissions into the atmosphere will be determined after completion of the work (2016);
- reconstruction of turbine unit №7 T-76-90 / 2.3 (rotor replacement of low pressure cylinder). Turbine № 7 served 2125 hours after the reconstruction, at the same time the economy of fuel (coal) amounted to 3040 tonnes, steam consumption for electric energy generation was 4.17 tonnes per MW instead of 4,983 tonnes per MW, which will reduce the amount of harmful emissions into the atmosphere;
- an agreement signed with "Energoinvest-PV",LLP for the recultivation of the Ash pond№3, an area of 32.8 hectares has been completed (Emissions permit into the environment). Recultivation work is provided in 2 phases: technical and biological, which will reduce the negative impact on the environment (use of developed land resources, moistening the territory and roads, shelter tents body dump trucks for transportation of loose and dusty materials, planting). The company intends to complete all stages of recultivation of Ash pond№3 by 2018;
- an independent accredited laboratory analysis of oil samples for the presence of PCBs in the oils of electric equipment was conducted by LLP "EKOEXPERT". The presence of PCBs in the samples submitted were not found.

Electric distribution companies (“Pavlodar Regional Electric Distribution Company” JSC and “North Kazakhstan Electric Distribution Company” JSC)

Key energy-saving activities, implemented by the NKEDC for the amount of 430.508 million tenge, and by the PREDC for the amount of 1032.487 million tenge, were the following:

- replacing of the bare wire by the 25.334-km-self-supporting insulated one around the city and oblast by the PREDC (costs made 81.184 million tenge), and 59.033 km – by the NKEDC (costs made 267.058 million tenge);
- integration by the NKEDC of automatic system for commercial measurement of power consumption on retail market (for domestic consumers) at 4,185 measuring points (costs made 300.215 million tenge), by the PREDC - 7,259 points (costs made 423.84 million tenge);
- removal of metering on the limit of networks’ balance participation and replacement of the bushings (metering of billing devices by consumer groups in a time-bound of 25.072 million tenge), “NK EDC”, JSC;

- restoring by the NKEDC of technical record-keeping data on substations, transformer substations, package transformer substations of the city and oblasts (costs made 24.037 million tenge).

Investment program implementation resulted in the key economic effect – such as 55.9 mln. kW/h or 3.68% decrease in the normative technical losses on NKEDC; actual losses came down to 9.75% in comparison with 13.43% expected. The PREDC demonstrates 16.5 mln. kW/h-decrease in normative technical losses; actual losses came down to 8.78% in comparison with 9.42% expected.

Heat transportation companies (“Pavlodar Heating Networks” LLP, “Petropavlovsk Heating Networks” LLP)

Activities implemented:

- reconstruction of transit pipelines with the use of pre-insulated pipeline. This project’s economical effect is presented by the heat losses decrease on reconstructed sites, thermal energy sales gain, as well as lack of necessity for renewing the heat-insulating installations within the pipeline lifecycle. In 2015, 3.6 km of pipeline were renewed by the Petropavlovsk Heating Networks within the project (costs made 462 million tenge), 3.2 km – by the Pavlodar and Ekibastuz Heating Networks (costs 282.6 million tenge);
- restoration of the heat-insulating installations of transit pipelines with the use of polyurethane insulation (urethane-foam cover). This heat-insulation type’s efficiency lies in reducing background heat losses on the pipelines’ reconstructed sites, as well as increasing the heat-insulating installations’ operating life.
Within the project, in 2015 1.836 km of pipelines were renewed by the Petropavlovsk Heating Networks (costs made 41 million tenge).

At the end of 2015 the actual technical losses are 27.87% in Petropavlovsk and 2.81% less compared to the last year, technical losses in Pavlodar and Ekibastuz averaged to 29.5%, which are 2.5% less than in 2014 year

6. Regulations of the Company's environmental activities for 2015

The Company's business operations conform with environmental laws, i.e. Environmental Code and other regulatory and legal acts of the Republic of Kazakhstan.

Environmental requirements to the Company's entities

“PAVLODARENERGO” JSC (CHP-2, CHP-3, and Ekibastuz CHP):

- emissions permit into the environment of CHP-2, CHP-3, ECHP "PAVLODARENERGO", JSC for the period 2015-2019, № VCZ00024623 dated December 30, 2014, issued by the Committee of environmental regulation, control and state inspection in oil and gas complex of the Ministry of Energy of the Republic of Kazakhstan (hereinafter - Committee of ME RK);
- draft standards for maximum permissible emissions (MPE) of CHP-2 "PAVLODARENERGO", JSC for the period 24.10.14 - 24.10.2019 agreed by the Department of Ecology of Pavlodar region (hereinafter - DE for Pavlodar region) of Committee of ME RK;
- draft standards for maximum permissible emissions (MPE) of CHP-3 "PAVLODARENERGO", JSC for the period 24.10.14-24.10.2019 agreed by DE for Pavlodar region of Committee of ME RK;
- draft standards for maximum permissible emissions (MPE) ECHP "PAVLODARENERGO", JSC for the period 24.10.14-24.10.2019 agreed by DE for Pavlodar region of Committee of ME RK;
- draft regulations placement of production and consumption waste CHP-2 "PAVLODARENERGO", JSC for the period 07.11.14 - 07.11.19 agreed by DE for Pavlodar region of Committee of ME RK;
- draft regulations placement of production and consumption waste CHP-3 "PAVLODARENERGO", JSC for the period 07.11.14 - 07.11.19 agreed by DE for Pavlodar region of Committee of ME RK;
- draft regulations placement of production and consumption waste ECHP "PAVLODARENERGO", JSC for the period 14.11.14- 14.11.19 agreed by DE for Pavlodar region of Committee of ME RK;
- individual current rate of water consumption and wastewater CHP-2 "PAVLODARENERGO", JSC, agreed by the Committee of Water Resources of the Ministry of Agriculture of the Republic of Kazakhstan (hereinafter - CWR MA RK);
- individual current rate of water consumption and wastewater standards CHP-3 "PAVLODARENERGO", JSC agreed by CWR MA RK;
- individual current rate of water consumption and wastewater standards ECHP "PAVLODARENERGO", JSC agreed by CWR MA RK;
- plan for Environmental protection measures CHP-2 "PAVLODARENERGO", JSC for 2015-2019 agreed by DE for Pavlodar region of Committee of ME RK;
- plan for Environmental protection measures CHP-3 "PAVLODARENERGO", JSC for 2015-2019 agreed by DE for Pavlodar region of Committee of ME RK;
- plan for environmental protection measures ECHP "PAVLODARENERGO", JSC for 2015-2019 agreed by DE for Pavlodar region of Committee of ME RK;
- insurance policy number №00018383 ECO series from 23.02.2015 valid till 03.09.2016;

- industrial environmental monitoring program for JSC "PAVLODARENERGO" for the period 2015-2019;
 - individual current rate of water consumption and wastewater standards CHP-2 "PAVLODARENERGO", JSC agreed by CWR MA RK for the period 2011-2016;
 - individual current rate of water consumption and wastewater standards CHP-3 "PAVLODARENERGO", JSC, agreed by CWR MA RK for the period 2011-2016;
 - individual current rate of water consumption and wastewater standards ECHP "PAVLODARENERGO", JSC agreed by CWR MA RK for the period 2011-2016.
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- environmental expert conclusions on the projects' environmental impact assessment:
 - reconstruction of the ash collector of the BKZ-75-39FB-type boiler at the "PAVLODARENERGO" JSC's Ekibastuz CHP's station # 9, involving installation of 2nd-generation battery emulsifier (conclusion # 3-2-12/573 dated 17.02.2012);
 - reconstruction of the ash collector of the BKZ-75-39FB-type boiler at the "PAVLODARENERGO" JSC's Ekibastuz CHP's station # 6, involving installation of 2nd-generation battery emulsifier (conclusion # 3-2-12/158 dated 03.06.2011);
 - installation of the PT-65/75-130/13-type turbo generator at the "PAVLODARENERGO" JSC's CHP-3's station # 1 (conclusion # 3-2-12/5173 dated 22.10.2010);
 - construction of the "PAVLODARENERGO" JSC's CHP-2's ash dump's line # 2 (conclusion # 3-2-12/464 dated 03.02.2012);
 - construction of the three-section block-modular fan cooling tower at the "PAVLODARENERGO" JSC's CHP-2's pool (conclusion # 3-2-12/3495 dated 07.12.2012);
 - reconstruction of the ash collector of the BKZ-160-100F (M)-type boiler at the "PAVLODARENERGO" JSC's CHP-2's station # 3, involving installation of 2nd-generation battery emulsifiers (conclusion # 3-2-12/3332 dated 26.11.2012);
 - reconstruction of the ash collector of the BKZ-420-240-type boiler at the "PAVLODARENERGO" JSC's CHP-3's station # 2, involving installation of 2nd-generation battery emulsifiers (conclusion # 3-2-12/3330 dated 26.11.2012);
 - reconstruction of the ash collector of the BKZ-160-100 (M)-type boiler at the "PAVLODARENERGO" JSC's CHP-2's station # 1, involving installation of 2nd-generation battery emulsifiers (conclusion # KZ12VCY00002196 dated 26.11.2013);
 - adjustment of the "Reconstruction of the CHP-2's ash dump's earth water-retaining facilities" working project (environmental expert conclusion # KZ14VCY00003906 dated 12.03.2014);
 - environmental impact pre-assessment to the feasibility report of the project on choosing turbine device for the Ekibastuz CHP's station # 2 (environmental expert conclusion # KZ74VCY00012720 dated 30.05.2014);
 - the T-100-130-type turbo generator reconstruction at the CHP-3's station # 5, involving generator replacement (environmental expert conclusion # KZ31VCY00014561 dated 31.07.2014);
 - construction of section # 2 of the ash dump in the Tuz lakebed at Ekibastuz CHP" (environmental expert conclusion # KZ06VCY00014817 dated 13.08.2014);
 - conclusion on the "Server room" working project (environmental expert conclusion # KZ06VCY00030906 dated 12.12.2014);
 - environmental expert conclusion on environmental impact assessment of the "Cooling tower # 5 installation at CHP-3" working project (conclusion # KZ90VCY00016409 dated 24.10.2014);

- restoration of the ash dump's line # 1 at the "PAVLODARENERGO" JSC's CHP-3 (environmental expert conclusion # KZ65VDC00030038 dated 28.11.2014);
- reconstruction of water conditioning, involving the crude water supply ø 500-pipelines replacement in chemical department (2 strings), and installation of new crude water clarifier for the "PAVLODARENERGO" JSC's CHP-3 (environmental expert conclusion # KZ86VCY00013337 dated 28.11.2014).
- construction of the main control room CHP-3 "PAVLODARENERGO", JSC (report №KZ74VDC00033756 dated 24.02.2015);
- installation of turbine unit №2 of PT-65/75-130-13 CHP-3 "PAVLODARENERGO", JSC (report №KZ34VCY00019260 dated 17.03.2015);
- installation of chimney №2 CHP-3 "PAVLODARENERGO", JSC (report №KZ86VCY00019488 dated 03.04.2015);
- reconstruction of sewage fecal sewage from the sewer of "PKRZ" to the pumping station CHP-3 "PAVLODARENERGO", JSC (report №KZ45VDC00035054 dated 08.04.2015);
- replacement of electrolysis unit of SEU-4M for retrofit to replace worn-out with a control panel and receivers for CHP-2 "PAVLODARENERGO", JSC (report №KZ22VDC00035177 dated 13.04.2015);
- reconstruction of the dredging pump №1,2 CHP-3 "PAVLODARENERGO", JSC (report №KZ91VDC00035196 dated 13.04.2015);
- reconstruction of water treatment with replacement of pipelines ø500 supply of raw water in a chemical section (2 lines) with the installation of a new clarifier of raw water in the CHP-3 "PAVLODARENERGO", JSC (report №KZ16VDC00035188 dated 13.04.2015);
- reconstruction of dredge pumping CHP-2 "PAVLODARENERGO", JSC (report №KZ53VDC00035201 dated 13.04.2015).

"Pavlodar Regional Electric Distribution Company" JSC

- emissions permit into the environment from 01.01.2013 till 05.10.2017, # 0001771 dated 14.12.2012, the "PREDC" JSC's East Electric Networks;
- emissions permit into the environment from 01.01.2013 till 22.10.2017, # 0001835 dated 26.12.2012, the "PREDC" JSC's City Electric Networks;
- emissions permit into the environment from 01.01.2014 till 15.11.2018, # KZ02VDD00001894 dated 25.12.2013, the "PREDC" JSC's District Electricity Networks;
- emissions permit into the environment from 01.09.2015 till 18.12.2019, № KZ13VDD00015858, "Pavlodar EDC", JSC - industrial base on Suvorov str., 79;
- a draft of standards of wastes production and limits of "Pavlodar EDC", JSC approved 28.08.13 by Environment Agency of Pavlodar region;
- environmental expert conclusion # 12/1-15/UL-B-439 dated 28.08.2013 on the production and consumption wastes disposal draft norms for the Pavlodar Regional Electric Distribution Company;
- environmental expert conclusion # 12/1-15/UL-B-414 dated 24.07.2013 on the "Reconstruction of 110/10-10 kW "Leninskaya" substation" Project;
- environmental expert conclusion # 12 / 1-15 / UL-B -29 dated 24.01.2013 on the project "Reconstruction of the substation "Maykain - 61"- 35/6 kV of Pavlodar region;
- environmental expert conclusion № KZ61VDC00004405 dated 07.02.2014 on the project "Reconstruction of 35 kV overhead line №38 "Ermak - Construction – Kalkaman"

“Pavlodar Heating Networks” LLP

- draft maximum permissible emissions allowance for the “Pavlodar Heating Networks” LLP. Environmental expert conclusion # 1-14/UR-687 dated 28.07.2011 on the “Pavlodar Heating Networks” LLP’s draft maximum permissible emissions;
- the "Maximum allowable atmospheric emissions rates" project (hereinafter - MPE), “Pavlodar District Heating”, LLP. State environmental expert review on MPE project, “Pavlodar District Heating”, LLP №KZ04VDC00041903 dated 28.10.2015;
- environmental Impact Assessment (EIA) for Ekibastuz heating networks, “Pavlodar District Heating”, LLP. State environmental expert review on the project №1-14 / IOP-885 dated 25.10.2011;
- the "Maximum allowable atmospheric emissions rates" project for Ekibastuz heating networks, “Pavlodar District Heating” LLP. State environmental expert review on MPE project №KZ31VDC00041902 for Ekibastuz heating networks, “Pavlodar District Heating”, LLP dated 28.10.2015;
- waste management standards for project “Pavlodar District Heating”, LLP (including Pavlodar and Ekibastuz heating networks). State environmental expert review №1-12/IOP dated 02.06.2011;
- the draft on waste disposal standards, “Pavlodar District Heating” LLP. State environmental expert review №KZ30VDC00043084 dated 24.11.2015;
- the draft waste disposal standards for Ekibastuz heating networks, “Pavlodar District Heating” LLP. State environmental expert review №KZ05VDC00044116 dated 14.12.2015;
- environmental emissions permission for 2012-2015 # 0001470, issued by the “Department for Natural Resources Management and Surface Use Regulation” Government Institution, allowing the “Pavlodar Heating Networks” LLP to make emissions in the amount of 1.3657226 tons in 2012, 1.3657226 tons in 2013, 1.3657226 tons in 2014, 1.3657226 tons in 2015;
- environmental emissions permission for objects of III category, “Pavlodar District Heating”, LLP №KZ69VDC00047539 dated 25.12.2015 issued by "Agency on the subsoil resources, environment and water resources management of Pavlodar region", that grants “Pavlodar District Heating” LLP the right to produce the emission of pollutants in the amount of 3.9213390 tonnes for the period 2016 -2024;
- environmental emissions permission for objects of IV category “Pavlodar District Heating”, LLP №KZ74VDC00047061 dated 22.12.2015 issued by "Agency on the subsoil resources, environment and water resources management of Pavlodar region ", that grants “Pavlodar District Heating”, LLP the right to produce the emission of pollutants in the amount of 0.00850080 tonnes;
- environmental emissions permission for 2012-2015 # 0001469, issued by the “Department for Natural Resources Management and Surface Use Regulation” Government Institution, allowing the “Pavlodar Heating Networks” LLP’s Ekibastuz Heating Networks Manufacturing Company to make emissions to the amount of 1.94156278 tons in 2012, 1.94156278 tons in 2013, 1.94156278 tons in 2014, 1.94156278 tons in 2015;
- environmental emissions permission for objects of IV category “Pavlodar District Heating”, LLP №KZ51VDC00046990 dated 22.12.2015 issued by "Agency on the subsoil resources, environment and water resources management of Pavlodar region",

that grants “Pavlodar District Heating”, LLP the right to produce the emission of pollutants in the amount of 1.950453 tonnes;

State environmental expert review on projects:

- «Construction of a heating main TM-XIV from TK-9И to TK-21K in Ekibastuz" (report №KZ46VDC00033484 dated 17.02.2015);
- «Construction of a heating main TM-VI on Pshembaev str. from TK-4A to TK-36L in Ekibastuz " (report №KZ31VDC00031426 dated 24.12.2014);
- «Construction of a heating main TM-IX on the Pshembaev str. from TK-25E to TK-4A in Ekibastuz "(report №KZ63VDC00035118 dated 10.04.2015).

“SEVKAZENERGO” JSC

- draft maximum permissible emissions allowance for the “SEVKAZENERGO” JSC for 2012-2014. Environmental expert conclusion # 06-03-01-18/7079 dated 27.08.2009 on the “SEVKAZENERGO Petropavlovsk” LLP’s draft maximum permissible emissions;
- draft maximum permissible emissions allowance for the “SEVKAZENERGO” JSC for 2011-2015. Environmental expert conclusion # 10-02-15/5676 dated 15.12.2010 on the “SEVKAZENERGO” LLP’s draft maximum permissible emissions;
- environmental emissions permission for the “SEVKAZENERGO” JSC for the station # 8’s boiler reconstruction period (2013-2014) # 0000027 dated 25.09.2013, allowing the company to make 0.655 tons emissions in 2013;
- Ishim Series permission # 04-0007-I dated 24.01.2013 for special water consumption for the purposes of partially clean water disposal;
- Ishim Series permission # 04/3-0022-I dated 09.12.2013 for the company’s production water supply;
- Ishim Series permission # 04/3-0022-I dated 09.12.2013 for the company’s production water supply;
- Ishim Series permission # 04/3-0008-I for the Bolshoye Beloye lake’s water consumption in the Republic of Kazakhstan;
- hazardous wastes certificates, developed in 2013;
- EC-series certificate of insurance # 0003847 dated 24.09.2013. Valid from 24.09.2013 to 23.09.2014;
- the “SEVKAZENERGO” JSC’s pollution sites registry certificates, renewed in 2013;
- the “SEVKAZENERGO” JSC’s environment protection plan for 2014-2016;
- the “Environmental impact assessment” draft project (stage 3) (“Environment Protection” section), the “Petropavlovsk CHP-2’s BKZ 220-100-4 # 12 steam boiler (reconstruction)” draft project. Environmental expert conclusion # 05-4-03/2596 dated 11.12.2013 on the “Petropavlovsk CHP-2’s BKZ 220-100-4 # 12 steam boiler (reconstruction)” environmental impact pre-assessment project;
- the “AccessEnergoPetropavlovsk” LLP’s CHP-2’s soil quarry development and restoration” project (Quarry);
- environmental emissions permission for 2014-2016 # 0000257 dated 27.12.2013 for the “SEVKAZENERGO” JSC, allowing the company in 2014 to make 47.354.351 tons of emissions, 41,279.09 tons of disposals, 1,287,282.976 tons of production and consumption wastes;

- environmental emissions permission # 0005115 dated 18.04.2014 for the “SEVKAZENERGO” JSC’s clay loam quarry;
- the “SEVKAZENERGO” JSC’s environment protection plan on the clay loam quarry for 2014-2017;
- greenhouse gases emissions certificate # 100033 dated 22.05.2014;
- wastes management program for 2014-2018;
- environmental expert conclusion # KZ80VDC00005615 dated 19.03.2014 on draft maximum permissible emissions for the “SEVKAZENERGO” JSC’s clay loam quarry;
- environmental expert conclusion # KZ82VDC00029538 dated 19.11.2014 on the “Environment Protection” section of the “Restoration of the “SEVKAZENERGO” JSC’s CHP-3’s ash dump # 3” Project;
- section "Environmental Protection" to the working project "Rehabilitation №3 Ash pond of CHP-2 "SEVKAZENERGO" JSC;
- emissions permit into the environment №KZ79VDD00033585 dated 08.10.2015 valid for the period 08.10.2015-31.12.2018 "Agency of natural resources and environmental management of the North-Kazakhstan region";
- plan for environmental protection measures during the recultivation of ash disposal area №3 of CHP-2 "SEVKAZENERGO" JSC;
- environmental Impact Assessment to the working project "Reconstruction of Petropavlovsk CHP-2, including the replacement of turbine unit №1";
- plan for environmental protection measures for reconstruction of Petropavlovsk CHP-2, including the replacement of turbine unit №1";
- emissions permit into the environment №KZ78VCZ00025662 dated 12.06.2015, valid for the period 12.06.2015-31.12.2015 issued by the Department of ecology of environmental regulation committee, control and state inspection in oil and gas sector of Ministry of Energy of RK", "Reconstruction of Petropavlovsk CHP-2, including the replacement of turbine unit №1";
- state environmental expert review №KZ10VCY00018043 dated 26.12.2014 issued by the Department of ecology of environmental regulation committee, control and state inspection in oil and gas sector of Ministry of Energy of RK", "Reconstruction of Petropavlovsk CHP-2, including the replacement of turbine unit №1";
- sanitary-epidemiological expert review №1500.III.KZ89VBS00000278 dated 21.11.2014 issued by the Department of Consumer Protection of North Kazakhstan region, "Reconstruction of Petropavlovsk CHP-2, including the replacement of turbine unit №1";
- certificate on greenhouse gas emissions of "SEVKAZENERGO", JSC dated 30.11.2015, the Series № 100243.

“NORTH KAZAKHSTAN ELECTRIC DISTRIBUTION COMPANY” JSC

- draft maximum permissible emissions allowance for the “NORTH KAZAKHSTAN ELECTRIC DISTRIBUTION COMPANY” JSC for 2012-2016. Environmental expert conclusion # 03.10-03/3128 dated 21.12.2011 on the “NORTH KAZAKHSTAN ELECTRIC DISTRIBUTION COMPANY” LLP’s draft maximum permissible emissions;
- T-13 series environmental emissions permission # 0001915 dated 22.02.2012 for the “NORTH KAZAKHSTAN ELECTRIC DISTRIBUTION COMPANY” JSC, allowing the company to make 14.738070391 tons of emissions in a year;

- environmental expert conclusion # 0002101 dated 25.05.2012 on the “Reconstruction of oil facilities building”;
- the production ecological control program for the “North Kazakhstan Electric Distribution Company” JSC for 2012-2016;
- hazardous wastes certificates, developed in 2008, 2009, 2011;
- OES-series certificate of insurance # 0004020 dated 13.07.2014. Valid till 03.07.2014;
- the “North Kazakhstan Electric Distribution Company” JSC’s wastes management program for 2014-2019;
- the “North Kazakhstan Electric Distribution Company” JSC’s draft wastes disposal norms, approved by the Ecology Department in North Kazakhstan oblast;
- environmental emissions permission for 2012-2016 # 0001915 dated 22.22.2012 for the “North Kazakhstan Electric Distribution Company” JSC, allowing the company to make 14.738070391 tons of emissions in a year;
- environmental expert conclusion # 0002101 dated 25.05.2012 on the “Reconstruction of oil facilities building”;
- the production ecological control program for the “North Kazakhstan Electric Distribution Company” JSC for 2012-2016;
- the “North Kazakhstan Electric Distribution Company” JSC’s environment protection plan for 2012-2016;
- wastes certificates, developed in 2008, 2009, 2011, 2014;
- OES-series certificate of insurance # 00017470 dated 01.07.2015. Valid till 03.07.2016.

“Petropavlovsk Heating Networks” LLP

- draft maximum permissible emissions allowance for the “Petropavlovsk Heating Networks” LLP, negotiated with the Department for Natural Resources Management and Surface Use in North Kazakhstan oblast in 2014. Environmental expert conclusion # KZO4VDC00005625 dated 19.03.2014 on the “Petropavlovsk Heating Networks” LLP’s;
- emissions permit into the environment №0005125 dated 21.04.14, allowing for the emission of pollutants, valid from 01.01.15 till 18.03.19;
- a draft of standards of waste production and limits approved in 2015 by the State authority of natural resources management and regulation. State environmental expert review №KZ65VDC00037701, "Petropavlovsk District Heating" LLP dated 30.06.15;
- emissions permit into the environment №KZ15VDD00029693 dated 01.09.15, allowing for the waste production and limits valid for the period from 01.09.15 till 29.06.25;
- the waste management program for the period 2015-2025;
- plan for environmental protection measures for "Petropavlovsk District Heating" LLP for the period 2015-2019;
- plan for environmental protection measures "Petropavlovsk District Heating " for the period 2015-2025;
- the “Petropavlovsk Heating Networks” LLP’s environmental impact assessment. Environmental expert conclusion # 03.10-03/436 dated 02.03.2010;
- hazardous wastes certificates, approved by the “Ecology Department” Government Institution, developed in 2012-2014;
- OES-series certificate of insurance # 10007078 dated 01.01.2014. Validity of the insurance policy before 31.12.2014.

- environmental expert conclusion # 03.10-03-19-766 dated 13.04.2012 on the “Reconstruction of 2Du600mm transit pipeline # 8 from 8-07-cogeneration point on Amangeldy-Internatsionalnaya streets to 8-09-cogenerator on Amangeldy-Brusilovsky streets” Project;
- environmental expert conclusion # 03.10-03-20-234 dated 03.02.2012 on the “Reconstruction of distribution networks from Brusilovsky street (9-19-cogenerator) through Constitution street, 50 (9-18-cogenerator) to “Solnyshko” kindergarden in Petropavlovsk city” Project;
- environmental expert conclusion # 03.10-03-20-233 dated 03.02.2012 on the “Reconstruction of distribution networks from Altynsarin street (1-14-cogenerator) to Mira street (8-04-load center) in Petropavlovsk city” working project;
- environmental expert conclusion # 03.10-03-20-229 dated 02.02.2012 on the “Reconstruction of distribution networks from Abai street (12-01-cogenerator) through the secondary school # 17 to Satpayev street in Petropavlovsk street” working project;
- environmental expert conclusion # 03.10-03-20-230 dated 02.02.2012 on the “Reconstruction of distribution networks from Volodarsky street (11-08-cogenerator) to Internatsionalnaya street (25-12-load center) in Petropavlovsk city” working project;
- environmental expert conclusion # 03.10-03-20-336 dated 20.02.2012 on the “Reconstruction of transit pipelines from Altynsarin street (2-17a-C-load center) through Almatinskaya and Abai streets, to Khalturin street (2-31-cogenerator)” working project;
- environmental expert conclusion # 03.10-03-20-2936 dated 06.11.2013 “Reconstruction of 2Du600mm transit pipeline # 1 from the pump station # 4 to 1-19-load center on Altynsarin street” working project.
- environmental expert conclusion # KZ20VDC00033758 dated 25.02.2015 to the working project "Construction of HMN№1 2Du600mm on Altynsarin street from UN-1-13-c up to UN-1-19”.

7. State Environmental Control

Government environmental audits

In 2015 the Company's entities were subjected to the following government audits.

“PAVLODARENERGO” JSC (CHP-2, CHP-3 and Ekibastuz CHP, “Pavlodar Regional Electric Distribution Company” JSC, “Pavlodar Heating Networks” LLP)

In 2015 at the enterprises of the group of "PAVLODARENERGO" JSC a no inspections were conducted by the government institutions.

“SEVKAZENERGO” JSC

- Unscheduled the “SEVKAZENERGO” JSC’s environmental protection activities audit, conducted by the “Ecology Department of the Committee for Environmental Regulation, Control and Government Inspection in Oil and Gas Fields of the Ministry of Energy of the Republic of Kazakhstan” Republican Government Institution;
- Unscheduled audit on the Water code of Republic of Kazakhstan (Rules of use the water resources and their protection) compliance, conducted by “Esil Basinal inspection” Republican Government Institution. According to the court №2 of Petropavlovsk North Kazakhstan dated 07.10.2015 the order №0033 dated August 7, 2015 and act №0033 about audit results of compliance with the water legislation from “Esil Basinal inspection for regulation of use and protection the water resources” Republican Government Institution of Water Resources Committee of the Agriculture Ministry of Republic of Kazakhstan were deemed illegal.

1 certificates, 2 notices were issued. All misconducts after audit were corrected on time to the full extent.

“North Kazakhstan Electric Distribution Company” JSC, “Petropavlovsk Heating Networks” LLP

No inspections “NKEDC” JSC and “PHN” LLP were conducted by the government institutions in 2015.

Information on environmental reports submitted

#	Information type	Name of the institution or official the information to be addressed to	Information submission terms
1.	# 2-TP Form Air (semi-annual, annual)	Statistics Department in Pavlodar oblast Oblast Statistics Department (Petropavlovsk)	Annual till January 24 till April 10
2.	# 4-OS FORM on environmental operating costs (annual)	Statistics Department in Pavlodar oblast Oblast Statistics Department (Petropavlovsk)	Annual Till February 23
3.	# 2-TP Form water industry	the “Irtys Basinal Inspection on	Annual

#	Information type	Name of the institution or official the information to be addressed to	Information submission terms
	(annual)	Regulations on Water Resources Management and Protection of the Water Resources Committee of the Ministry of Agriculture of the Republic of Kazakhstan” Government Institution Ishim Basinal Inspection (Petropavlovsk)	till January 10
4.	#IVK (water supply and canalization)	Statistics Department in Pavlodar oblast	till February 22
5.	“Dangerous wastes report” Form (annual)	Department of Ecology in Pavlodar oblast. Essil Department of Ecology (Petropavlovsk)	till March 1
6.	Environmental activities	Department of Ecology in Pavlodar oblast. Essil Department of Ecology (Petropavlovsk)	till January 10
7.	Environmental activities report	Department of Ecology in Pavlodar oblast. Essil Department of Ecology (Petropavlovsk)	Monthly, till the 5 th of the month following the reporting one Once in 3 months once in half-year, once in 9 months, once in a year
8.	Report on industrial ecological control program on the “PAVLODARENERGO” JSC	Department of Ecology in Pavlodar oblast.	Annual once in 3 months, once in a year, within 10 days following the reporting period
9.	Report on industrial ecological control program on the “SEVKAZENERGO” JSC	Department of Ecology in North Kazakhstan oblast (Petropavlovsk)	Quarterly
10.	Greenhouse gases inventory	Committee of environmental regulation, control and state inspection in oil and gas sector of Kazakhstan Ministry of Energy, Astana	till April 01

There are no any complaints on the reports quality; all reports are submitted on time.

8. Compliance with the safety and health issues

Social and labour relationships

Enhancement of social protection of employees, their family members, pensioners, retired from the entities, and disabled is the Company's key social priority. The privileges, compensations and guaranties policies were developed in this regard.

Under the applicable law of the Republic of Kazakhstan, the Company's entities provide workers with work clothes and safety shoes, personal protective gear, milk or its equivalent, and soap. Child birth lump sum payments and close relatives' funeral grants are provided to employees.

Summer camps are available to the Company's employees' children. In Petropavlovsk, parents are to pay only 20% of package cost. In Pavlodar, the "Electronic" health camp for children was allocated in summer pavilions of the "Energetik" sanatorium.

Special attention is paid to diagnostics and medical treatment programs for employees, especially operational personnel. Annual obligatory medical examinations are held at the expense of employers; operational workers undergo daily before and after work obligatory medical tests in order their state of health to be examined. Each Company's entity has furnished medical rooms at its disposal, where professionals provide physiotherapy, electrotherapy, heliotherapy, laser therapy, massage services, and specialized consultations. In Pavlodar, the "Energetic" sanatorium has been successfully functioning.

Financial support before each school year is granted to the employees having the multiple-children-family status, raising disabled children, for each school-age child. The Company's employees' children are traditionally given with Christmas presents.

Occupational health and safety is one of the key objectives, set by the Company's Labor Safety Management System (LSMS), covering 3-stage monitoring, i.e. inspecting labor safety requirements compliance at each workplace in a division, including monthly Occupational Health and Safety Day celebration, involving the Company's management, top specialists, and public safety inspectors. In 2015 at the "SEVKAZENERGO" JSC identified 899 inconsistencies on health and safety among employees of company and 249 inconsistencies on health and safety among employees of contractors, whom carrying out repair work on the territory of PCHP-2 of "SEVKAZENERGO" JSC, for all inconsistencies developed measures and appointed responsible persons for their implementation. As at 01.01.2016, all inconsistencies was eliminated.

In order to improve working conditions at the Company's entities, additional activities are developed and being implemented, including those on preventing occupational traumatism, accidents and diseases.

So In 2015 at the "SEVKAZENERGO" JSC:

- Repair the male and female showers in the administrative-household building was made;
- For maintain optimum climatic conditions in offices and manufacturing rooms was installed 23 air conditioners;
- To reduce dust air of the working area, exclusion draft in the workplace, noise and thermal insulation in the administration building, in medical center, in the turbine and boiler shops, in shop of thermal automatics and measurement and shop of electric was installed plastic windows;

- Replacement and repair of stairs, bridges, service platforms in the boiler and turbine shops was made;
- Safety signs and posters with visual agitation for safety and health was purchased;
- For protect a workers from harmful factors such as noise, vibration, adverse climate, coal dust was built the remote control panel of turbine unit №1,2;
- Catching of stray dogs was made.

For the purpose of increasing the occupational health and safety level, the Company's entities' activities are licensed and comply with the occupational health and safety management OHSAS 18001:2007 requirements.

Within the LSMS and occupational health and safety management, the Company's entities every month and once a quarter hold sessions on labor safety, aimed on increasing the labor safety level and strengthen all-level management's responsibility on labor safety in respective divisions, with further management review and, if necessary, development of additional measures on labor conditions improvement.

Fire safety commissions are established within the Company's entities, whose performance is based on the Fire Safety Commissions Chart, commissions meetings are held twice a year. Fire safety compliance inspections are conducted quarterly/monthly at CHPs within the schedules approved.

For the purpose of the Company's entities' fire safety compliance, the following activities are implemented:

- relevant employees in 2015 attended the fire-technical minimum programs at the Fire Technical Center of branch of "Ort Sondirushi" JSC in Petropavlovsk, as well as in other special organizations according to existing contracts;
- checks of fire safety condition carried out every quarter in the workshops of CHP-2, CHP-3 and ECHP, PCHP-2 (monthly), during which checks all industrial buildings and installations, facilities, warehouses, laboratories and workshops;
- guidelines on fire safety are developed and observed (Fire safety guidelines, Fire-fighting equipment storage guidelines, Guidelines on fire safety on hot works routines);
- fire sentries are appointed, their responsibilities scope is defined;
- relevant employees undertake training and testing on fire safety issues.

“SEVKAZENERGO” JSC releases the “Energetic of North Kazakhstan” newspaper, “PAVLODARENERGO” JSC - the “Energetic” newspaper, both aimed on nurturing corporate culture, supporting the profession image, and providing information on the companies' and entire industry news.

Safety Practice Day is celebrated monthly, where the commission members visit workplaces, workshops, rest rooms, locker rooms, shower rooms, divisions' territories, warehouses and others in order to examine their safety practice compliance. In 2015 on “SEVKAZENERGO” JCS by commission of safety identified 440 discrepancies rules and regulations on occupational health and safety, fire safety, all identified at the time of verification discrepancies are eliminated in full.

Public safety inspectors daily visit divisions in order to control the order-permit system compliance, i.e. completeness of fulfillment of measures on preparing workplaces (turn off/turn on of the equipment with posting safety signs, special fencing, additional lamps, ventilation, etc.), having pre-tested personal protective gear, electric and pneumatic tools, staging, ladders,

qualification certificate containing records on knowledge examination, special works and medical commissions, and also the document regulating repair works.

Engineering technicians of subordinated divisions every day go around the territory in order to inspect the personnel's observing production and duty regulations, maintaining the equipment's appropriate operation mode; observing shift turnover guidelines, managing operational documentation, observing production and labor discipline; detecting the equipment defects and malfunctions on time, and taking measures on their elimination; following the order-permit system guidelines upon repair and special works; having safety devices faultless.

In the course of 2015, the Security and Safety Service regularly visited workplaces in order to inspect safety status, safety and sanitary regulations compliance. The "PAVLODARENERGO" JSC in 2015 celebrated 12 Labor Safety Days in 25 divisions, upon which 300 acts were issued.

Labor law requirements on labor safety and healthcare are fulfilled through the following activities;

- managers and officials, responsible for the works safety, undertook training on labor safety issues; employees undertook industrial safety training, as well as had their skills advanced and acquired allied professions;
- workplaces are attested;
- workers are provided with work clothes, safety shoes, sanitary and preventive facilities, personal protective gear in sufficient quantity;
- contracts on the employers' liability compulsory insurance (LCI) for injury or disease to their employees, arising out of their employment, as well as LCI of the owners of the objects, whose activities are dangerous to the third parties, are concluded;
- working conditions status is continuously monitored;
- employees' preliminary and regular medical examination is implemented;
- the workers' health improvement in sanatorium issues are settled.

"PAVLODARENERGO" JSC develops annual Working conditions improvement actions plan. Activities are divided into 3 groups:

- traumatism and accidents prevention activities;
- diseases prevention activities;
- working conditions improvement activities.

In 2015, 138 activities were carried out for the amount of 35 841 thousand tenge.

In 2015, the "PAVLODARENERGO" JSC was finished commenced its workplaces attestation. On the basis of a contract, special agency measured hazardous and dangerous factors, developed intensity and work load map for each workplace in divisions, assessed working conditions at each workplace, and determined its hazard grade. On the basis of measurements and maps, activities on working conditions improvement were developed and approved. According the results of workplaces attestation materials was drafted Action Plan for improvement and enhancement of working conditions in factories.

Occupational health and labor safety reports

№ п/п	Information/report type	Submitted to	Frequency
1.	7-TPZ traumatism report (annual)	Oblast statistics departments	till February 25
2	Traumatism report (monthly, quarterly)	for SKE - Energy Surveillance and Control Department in North Kazakhstan oblast; Labor Department in Pavlodar oblast	till 10th
3.	Labor safety monitoring	for PE – “Control and Social Protection Department in Pavlodar oblast” Government Institution of the Ministry of Labor and Social Protection of the Population for SKE – the “Control and Social Protection Department in North Kazakhstan oblast” Government Institution	July 1, January 1 In 2014 the “PAVLODARENERGO” JSC was excluded from the list of entities, subjected to this report, due to rare cases of accidents and slightness of harm to the sufferers’ health Quarterly, till 26 th of the month, preceding the reporting one
4.	Fire safety monitoring	For SKE – Department of Energy, Houses and Utilities in North Kazakhstan oblast	Quarterly, till 10 th of the month, following the reporting one

All reports on labor and fire safety in 2015 and annual reports were submitted on time, as above specified.

9. Environmental regulatory and legal framework in Republic of Kazakhstan

The Company's business operations conform with the environmental laws, i.e. Environmental Code and other regulatory and legal acts of the Republic of Kazakhstan.

List of legal acts, regulating the divisions' environmental activities

Document type	Document title	Number	Effective date	Duration	Last revision date
Constitution	Constitution of the Republic of Kazakhstan	-	5 September, 1995	until replaced by a new one	2 February, 2011
Code	Environmental Code	212-III	9 September, 2007	until replaced by a new one	17 December, 2015
Code	Water Code	481- II	9 July, 2003	until replaced by a new one	15 June, 2015
Code	Land Code	442- II	20 June, 2003	until replaced by a new one	17 November, 2015
Code	On Taxes and Other Obligatory Payments to the Budget	100-IV	10 December, 2008	until replaced by a new one	03 December, 2015
Code	Entrepreneurial Code	375-V	29 October, 2015	until replaced by a new one	01 January, 2015
Law	On Mandatory Environmental Insurance	93- III	07 May, 2015	until replaced by a new one	27 April, 2015
Law	On Subsurface and Subsurface Use	291-IV	6 June, 2010	until replaced by a new one	29 December, 2014
Law	On Civil Protection	188-V	25 April, 2014	until replaced by a new one	03 December, 2015
Law	On Safety of Chemical Production	302-III	21 July, 2007	until replaced by a new one	29 December, 2014

Document type	Document title	Number	Effective date	Duration	Last revision date
Law	On Railway Transportation	266-II	8 December, 2001	until replaced by a new one	04 December, 2015
Law	On State Control and Supervision in the Republic of Kazakhstan	377-IV	26 January, 2011	until replaced by a new one	29 December, 2014
Order of the Government of the Republic of Kazakhstan	On approval of Regulations on using water supply and disposal systems in residential areas	832	5 June, 2009.	until replaced by a new one	5 June, 2009.
Order of the Government of the Republic of Kazakhstan	On approval of Regulations on the government accounting of the greenhouse gases emitters and ozone-depleting substances consumption	714	1 May, 2012	until replaced by a new one	1 May, 2012
Order of the Government of the Republic of Kazakhstan	On approval of Regulations on establishing liquidation funds of the wastes disposal facilities	591	10 July, 2007	until replaced by a new one	10 July, 2007
Order of the Government of the Republic of Kazakhstan	On approval on Technical regulations “Requirements on environmental emissions in the course of different types fuels combustion in the thermal power plants’ boilers”	1232	14 December, 2007	until replaced by a new one	21 July, 2010
Order of the Government of the Republic of Kazakhstan	On approval of Sanitary regulations “Sanitary and epidemiological requirements to water sources, points of water supply for domestic consumption and drinking, household water supply, community water supply points, and water bodies safety”	104	18 January, 2012	until replaced by a new one	29 March, 2013
Order of the Government of the Republic of	Regulations on the subsurface management objects liquidation and	634	6 June, 2011	until replaced by a new	6 June, 2011

Document type	Document title	Number	Effective date	Duration	Last revision date
Kazakhstan	conservation			one	
Order of the Government of the Republic of Kazakhstan	Regulations on granting the subsurface usage right	1456	01.02.11г	until replaced by a new one	27 July, 2015г.
Order of the Government of the Republic of Kazakhstan	On approval of Regulations on effluents intake into the residential areas' water disposal systems	788	28 May, 2009	until replaced by a new one	28 May, 2009
Order of the Government of the Republic of Kazakhstan	On approval of Regulations on the wastes management programs development	403	30 March, 2012	until replaced by a new one	30 March, 2012
Order of the Government of the Republic of Kazakhstan	On approval of Regulations on granting greenhouse emissions allowances	584	7 May, 2012	until replaced by a new one	19 February, 2013
Order of the Government of the Republic of Kazakhstan	On approval of the National plan on greenhouse gases emissions quotas distribution for 2014-2015	1536	1 January, 2014	31 December, 2015	05 February, 2015
Order of the Government of the Republic of Kazakhstan	On approval of Regulations on changing quotas and greenhouse gases emission certificate reissue	585	17 June, 2012	until replaced by a new one	24 September, 2013
Order of the Government of the Republic of Kazakhstan	On approval of Regulations on the greenhouse gases emissions quotas distribution	586	17 June, 2012	until replaced by a new one	23 July, 2015
Order of the Government of the Republic of Kazakhstan	On approval of Regulations on the greenhouse gases emissions quotas and carbon units trading	151-p	18 September, 2012	until replaced by a new one	28 February, 2014
Order of the Government of the Republic of Kazakhstan	On approval of Regulations on the greenhouse gases monitoring and inventory	840	27 August, 2012	until replaced by a new one	26 June, 2012

Document type	Document title	Number	Effective date	Duration	Last revision date
	control				
Order of the Government of the Republic of Kazakhstan	On approval of Regulations on the project mechanisms implementation in the field of the greenhouse gases emissions and consumption regulation	897	28 August, 2012	until replaced by a new one	30 June, 2012
Order of the Government of the Republic of Kazakhstan	On approval of Regulations on reviewing, approving and implementing the projects serving for the greenhouse gases emissions and absorption reduction	841	28 August, 2012	until replaced by a new one	26 June, 2012
Order of the Government of the Republic of Kazakhstan	On approval of Regulations on the greenhouse gases and ozone-depleting substances emissions inventory	348-P	13 December, 2007	until replaced by a new one	25 May, 2012
Classifier	Wastes Classifier	169-p	31 May, 2007	until replaced by a new one	7 August, 2008
ST RK	Environmental management systems. Requirements with guidance for use	14001	2006	until replaced by a new one	2006
IS	Guidelines for auditing quality and/or environmental management systems	19011	2002	until replaced by a new one	2006
IS	Environmental management systems. Requirements with guidance for use	14001	2004	until replaced by a new one	2004
IS	Guidelines for auditing quality management systems	19011	2011	until replaced by a new one	2011
Regulatory document	Methods of identifying the level of the environmental components pollution by	03.3.0.4.01-96	29 August, 2007	until replaced by a new one	1996

Document type	Document title	Number	Effective date	Duration	Last revision date
	the industrial and consumption wastes' toxic substances				
Regulatory document	Techniques for regulating the industrial wastes generation and disposal	03.1.0.3.01-96	29 August, 2007	until replaced by a new one	1997
Sanitary regulations and standards	Houses water plumbing and canalization	4.01-41-2006	1 June, 2007	until replaced by a new one	01 October, 2015
Government standard (GOST)	Secondary ferrous metals. General technical conditions	2787-75	1975	until replaced by a new one	1977
Sanitary regulations and standards	Sanitary guidelines for working with mercury, its compounds and mercury-filled apparatus	1.10.083-94	1994	until replaced by a new one	1994
Instruction	Prompt actions in unfavorable meteorological conditions (UMC) at the "PAVLODAR-ENERGO" JSC	PI-09-01-14	15 July, 2014	15 July, 2017	15 July, 2014
Instruction	Instruction on organizing and performing the subcontractors' works on the "PAVLODARENERGO" JSC 's territory	PI-10-02-14	4 April, 2014	4 April, 2017	4 April, 2014
Government standard (GOST)	"Labor safety standards. Manufacturing equipment. General safety requirements"	12.2.003-91	1991	until replaced by a new one	1991
Government standard (GOST)	"Labor safety standards. Harmful substances. Classification and general safety requirements"	12.1.007-76	1976	until replaced by a new one	1990

Document type	Document title	Number	Effective date	Duration	Last revision date
Government standard (GOST)	“Labor safety standards. Manufacturing equipment. General ergonomic requirements”	12.2.049-80	1980	until replaced by a new one	1980
Government standard (GOST)	«Dangerous cargo. Classification and marking»	19433-1-2010 19433-2-2010 19433-3-2010	2010	until replaced by a new one	2010
ST RK	Environmental management systems. General guidelines on principles, systems and support techniques	14004	2010	until replaced by a new one	2010
Decree of Minister of National Economy of the Republic of Kazakhstan	On Approval of Regulations of using the water supply and wastewater disposal systems of settlements	163	13 May, 2015	until replaced by a new one	28 February, 2015
Decree of Minister of Energy of the Republic of Kazakhstan	On Approval of Regulations for the formation the liquidation fund waste disposal landfills	125	23 May, 2015	until replaced by a new one	13 November, 2014
Decree of Minister of National Economy of the Republic of Kazakhstan	On Approval of Sanitary Regulations "Sanitary-epidemiological requirements for water sources, water intake places for drinking purposes, drinking water supply and places of cultural and community water use and safety of water bodies"	209	28 May, 2015	until replaced by a new one	16 March, 2015
Joint decree of Minister of Investment and Development Republic of Kazakhstan and	Regulations of liquidation and conservation the objects of subsoil	200 155	07 September, 2015	until replaced by a new one	27 February, 2015

Document type	Document title	Number	Effective date	Duration	Last revision date
Minister of Energy of the Republic of Kazakhstan					
Decree of Minister of National Economy of the Republic of Kazakhstan	On approval of Regulations of sewage reception to the wastewater disposal system in settlements	546	25 October, 2015	until replaced by a new one	20 July, 2015
Decree of Minister of Energy of the Republic of Kazakhstan	On approval of Regulation of developing waste management program	146	05 July, 2015	until replaced by a new one	25 November, 2014
Decree of Minister of Energy of the Republic of Kazakhstan	On approval of Regulation of changes a quotas on emissions and renewal of certificate on greenhouse gas emissions	217	06 June, 2015	until replaced by a new one	16 July, 2015
Decree of Minister of Energy of the Republic of Kazakhstan	On approval of Regulation of monitoring and control of greenhouse gas inventory	221	25 May, 2015	until replaced by a new one	19 March, 2015
Decree of Minister of Energy of the Republic of Kazakhstan	On approval of Regulation of implementation of project-based mechanisms in field of emissions control and removals of greenhouse gases	76	29 November, 2015	until replaced by a new one	12 February, 2015
Decree of Minister of Environmental Protection of the Republic of	On approval of Hazardous Wastes Certificate form	128-p	30 April, 2007	until replaced by a new one	30 April, 2007

Document type	Document title	Number	Effective date	Duration	Last revision date
Kazakhstan					
Decree of Acting Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Regulations on putting nature management terms on environmental emissions allowances	112-p	16 April, 2007	until replaced by a new one	23 July, 2009
Decree of Minister of Energy of the Republic of Kazakhstan	On approval of design of the environmental emissions allowance documents and guidelines on filling them in	115	30 June, 2015	until replaced by a new one	20 February, 2015
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Regulations on handling public hearings	135-p	7 May, 2005	until replaced by a new one	26 March, 2013
Decree of Chairman of Statistic Committee of the Ministry of National Economy	Guidelines on filling-in the “Atmosphere protection report” 2-TP statistical form (air) (annual)	158	01 January, 2016	until replaced by a new one	09 October, 2015
Decree of the Statistics Agency of the Republic of Kazakhstan	Guidelines on filling-in the national statistical monitoring “Atmosphere protection report” form (2-TP) (water industry)	208	29 August, 2013	until replaced by a new one	29 August, 2013
Decree of Acting Minister of Agriculture of the Republic of Kazakhstan	On approval of Regulations on primary water resources accounting	1911-274	21 June, 2015	until replaced by a new one	30 March, 2015
Annex 8 to the Decree of Chairman of Statistics Committee of Ministry of National	Guidelines on filling-in the national statistical monitoring “Atmosphere protection report” form (code 1421103, index 2-TP (air), (annual))	29	28 October, 2014	until replaced by a new one	28 October, 2014

Document type	Document title	Number	Effective date	Duration	Last revision date
Economy of the Republic of Kazakhstan					
Decree of Minister on Emergency of the Republic of Kazakhstan	Industrial safety requirements in the course of exploitation of tailing and slime facilities of mining and non-metallic organizations	189	29 October, 2008	until replaced by a new one	29 November, 2011
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Regulations on the greenhouse gases and ozone-depleting substances emissions inventory	348-p	13 December, 2007	until replaced by a new one	25 December, 2012
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of design of the dangerous wastes report and guidelines on filling-in the dangerous wastes report forms	164-p	21 May, 2012	until replaced by a new one	21 May, 2012
Joint Decree of the Minister of Environmental Protection and Minister of Economic Development and Trade of the Republic of Kazakhstan	On approval of criteria for risk assessment and checklist forms in the field of environmental protection, reproduction and use of natural resources	431 474	16 August, 2015	until replaced by a new one	24 June, 2015
Annex 2 to the Decree of Chairman of Statistic Committee of the Ministry of National Economy	Guidelines on filling-in the national statistical monitoring “Environmental protection costs report” form (code 1414404, index 4-OC, annual)	158	01 January, 2016	until replaced by a new one	29 August, 2013
Decree of Minister of Environmental Protection of the	On approval of guidelines on evaluating expected business or any	204-p	28 June, 2007	until replaced by a new one	24 September, 2013

Document type	Document title	Number	Effective date	Duration	Last revision date
Republic of Kazakhstan	other activity's environmental impact within the pre-plan, plan, pre-project, and project documentation development course				
Decree of Acting Minister of Environmental Protection of the Republic of Kazakhstan	On limits (quotas) for ozone-depleting substances consumption	131-p	4 May, 2012	until replaced by a new one	4 May, 2012
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On methods and criteria for the greenhouse gases inventory reports development	149-p	10 May, 2012	until replaced by a new one	10 May, 2012
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On methods of the monitoring plans development in the course of the greenhouse gases emissions quotas distribution	143-p	10 May, 2012	until replaced by a new one	10 May, 2012
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Regulations on maintaining the carbon units state register	147-p	10 May, 2012.	until replaced by a new one	10 May, 2012
Decree of Minister of Energy of the Republic of Kazakhstan	On approval of the greenhouse gases inventory reports form	502	17 August, 2015	until replaced by a new one	28 July, 2015
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Regulations on monitoring, accounting and reporting on carbon units of the greenhouse gases emissions for the trade purposes	157-p	14 May, 2012	until replaced by a new one	14 May, 2012
Decree of Minister of Environmental	On approval of Regulations on the greenhouse gases and	348-p	13 December, 2007.	until replaced by a new	25 May, 2012

Document type	Document title	Number	Effective date	Duration	Last revision date
Protection of the Republic of Kazakhstan	ozone-depleting substances inventory			one	
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Regulations on conversing the project mechanisms in the field of regulating the greenhouse gases emissions and absorption conversion in quota items	148-p	04 August, 2012	until replaced by a new one	10 May, 2012
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Regulations on mutual agreement on quota items and other carbon units on the basis of international treaties of the Republic of Kazakhstan	153-p	05 September, 2012	until replaced by a new one	11 May, 2012
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Regulations on preparing, reviewing, approving, reporting and monitoring of internal projects on reducing the greenhouse gases emissions	150-p	01 September, 2012	until replaced by a new one	11 May, 2012
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Regulations on developing internal projects on reducing the greenhouse gases emissions, and list of fields and economy sectors, where they can be implemented	156-p	24 September, 2012	until replaced by a new one	14 May, 2012
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Regulations on the greenhouse gases emissions quotas and carbon units trading	151-p	18 September, 2012	until replaced by a new one	28 February, 2014
Decree of Minister of	On approval of Regulations on	144-p	08 September,	until replaced	10 May, 2012

Document type	Document title	Number	Effective date	Duration	Last revision date
Environmental Protection of the Republic of Kazakhstan	standardization of measuring and accounting the greenhouse gases emissions		2012	by a new one	
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	Persistent organic pollutants and wastes, containing them, handling requirements	40-p	24 February, 2012	until replaced by a new one	24 February, 2012
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of the form of application for changing the greenhouse gases emissions quotas	326-Θ	12 February, 2014	until replaced by a new one	23 October, 2013
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of the greenhouse gases inventory report design	123-p	23 November, 13	until replaced by a new one	15 May, 2013
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of the greenhouse gases and ozone-depleting substances emissions inventory	348-p	08 June, 2008	until replaced by a new one	25 May, 2012
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Regulations on standardization of measuring and accounting the greenhouse gases emissions	144-p	08 September, 2012	until replaced by a new one	10 May, 2012
Decree of Minister of Environmental Protection of the Republic of Kazakhstan	Methods of determination of the environmental emission norms	110-p	11 July, 2012	until replaced by a new one	11 December, 2013

President

E.A. Amirkhanov

Vice-President on Production

O.V. Perfilov

ANNEX #1

ENVIRONMENTAL AND SOCIAL ACTION PLAN OF “CENTRAL-ASIAN ELECTRIC POWER CORPORATION”, JSC FOR THE 2015

Corporate portfolio plan								
#	Action	Environmental risks / Liabilities / Benefits	Law requirements/ best practice	Invest-ment needs/ Resources (Euro, 000)	Schedule – when to be completed	Goal and evaluation criteria for successful completion	Comments	Report
0	<p>Undertake an independent audit, inclusive of the best available technologies (BAT) assessment in 2015 in order to verify the implementation of the current and past ESAP, as well as identify opportunities for further upgrade of environmental abatement and efficiencies.</p> <p>Based on the audit, a <u>new Action plan will be developed in order to increase the existing stations’ efficiency</u> by 2023 in accordance with national standards.</p>	Need for a long term investment program and operations review	EBRD	50-75 K EUR		<p>Report to the Bank in 2015.</p> <p>New action plan in 2016.</p>	<p>As part of the 2015 BAT Assessment, develop plan to limit dust, SOx and NOx emissions by 2023.</p> <p>The plan will set out road map to attain step-by-step reduction of emissions as per EU Standards under LCP and IED benchmarks below 50 mg/Nm3.</p> <p>BAT Assessment will result in review of the new-type equipment performance and show, what BAT should be selected for future upgrade at the CHPs. The selected best available practice (BAT) should comply with commercial realities of Kazakh electricity market, at the same time reducing</p>	<p>In connection with a large-scale work for improving the environmental legislation on energy sector of Kazakhstan (introduction more stringent standards for emissions a dust, nitrogen oxides and sulfur oxides with changes in the NPA of Republic of Kazakhstan) carried out in the framework of the agreement / cooperation concluded between the ME (KERK) and EBRD relative to the "Project for improvement of environmental standards in the energy sector of Kazakhstan" in the period 2014 -2016 yy and with need to harmonize introduction of new environmental requirements to emissions of heat and power stations of RK considering planned changes in this sector including electric power market launch plan and other strategic plans for development of the industry and before taking a final decision on the above "project" an independent audit of the Company was not conducted.</p>

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							emissions as per EU standards. The BAT Study will be used to adjust the tariffs to market levels (if applicable), and EBRD will support the Company in such discussions with regulators, as required.	
1	<p>Publish the corporate environment, health protection and safety (EHPS) report and make it publicly available (including on the Internet).</p> <p>In 2015 develop a CSR (Corporate Social Responsibility) as per GRI (Global Reporting Initiative) standards.</p>	<p>Ensure that the best practice is adopted across the organization, and environmental performance is transparent. Reporting of environmental performance to stakeholders.</p> <p>Publish the CSR report, inclusive of KPIs (Key Performance Indicators), such as energy and carbon intensity from stations.</p>	Best practice and EBRD requirements	Internal resources	Within 90 days from the end of each financial year	Report publication. 2015 CSR report in accordance with GRI.	<p>Corporate reports are prepared each year and published on the CAEPCO and PAVLODARENERGO's websites. The reports contain information, required by Environmental and social action plan (ESAP 2009); however they should be supplemented by information on planned new investments, last year data on security of supply of heat and electricity, and major PR-issues in accordance with the Stakeholder</p>	<p>The Corporate Report is developed in accordance with the approved sections, and published on the “Central Asian Electric Power Corporation” JSC’s website:</p> <p>http://caeppo.kz/ru/akczioneram-i-investoram/finansovaya-otchetnost.html</p> <p>“PAVLODARENERGO” JSC website:</p> <p>http://www.pavlodarenergo.kz/ru/ekologiya/otchetnost.html</p> <p>“SEVKAZENERGO” JSC website:</p> <p>http://www.sevkazenergo.kz/ru/ekologiya/otchetnost.html</p> <p>Report on Corporate Social Responsibility "CAEPCO" JSC prepared in accordance with GRI standards and published on the corporate website at the following link:</p>

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							Engagement Plan.	"CAEPCO" JSC website: http://caeppo.kz/ru/akczioneram-i-investoram/finansovaya-otchetnost.html
2	Upgrade the existing Stakeholder Engagement Plan (SEP) procedures and policy. The Company should upgrade the Stakeholders Engagement Plan and be externally audited at least once per 5 years	Stakeholders Engagement Plan is required for both corporate and individual sites. This needs to include a grievance plan (complaints procedures) to allow staff and external stakeholders (public, etc.) to voice concerns, opinions, etc. Good stakeholders engagement reduces the risk of civil unrest and public concern.	EBRD	Internal and external resources	3rd quarter of 2013 – then each 12 months	SEP to be updated annually and include the summary, which is to be submitted to the Bank within annual report	Companies implemented number of new procedures and informing methods to communicate the public about their activities. However, there is no structured database, containing such information as status of the stakeholders engagement plan implementation (type, number and time of: applied procedures, complaints, considerations, conducted environmental and information procedures, and communicating the public). This kind of data is only collected in	Stakeholders Engagement Plan (SEP) of subsidiaries of the “CAEPCO” JSC is systematized, updated and published on corporate websites of the Company: “CAEPCO” JSC website: http://caeppo.kz/ru/akczioneram-i-investoram/finansovaya-otchetnost.html

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							written form, and gathered in particular companies. This issue needs to be systematized. Furthermore, stakeholders engagement plan was not updated on the yearly basis.	
3	Maintain and improve the grievance mechanism for both internal (workers, subsidiaries) and external (local community, contractors) concerned parties. Making agreements with local community on construction and exploitation stages	People can express their opinion, the complaints are effectively processed and result in proper mitigation measures. Tasks and responsibilities are clearly identified.	Best practice, norms and Bank guidelines	Internal resources	2013 then - on regular basis	Grievance procedures are put in place and publicized. Inclose information in annual report	Current grievance mechanism does not fully meet the EBRD requirements. Information on possibilities for submitting grievance is not very clear, the Company does not keep register of submitted complaints and requests.	Within the subsidiaries of the Company, working directly with consumers and public, claims and complaints are being registered through: -the “trust line” (hotline phone); - through official corporate websites; -recording of claims of individuals and entities in the log of complaints of physical and legal entities; -audio recordings of all consumer claims are saved for 30 days, written responses are being submitted, and the measures are taken; -carried questioning of consumer in order to identify satisfaction / dissatisfaction of employees customer service center (CSC); -for the purpose of improvement of claim consideration mechanisms, the following sections are created: “Headquarters for work with consumers”, “Anticorruption”, “Request-Response”, “Feedback”, where the claims of external concerned persons, published in mass media, management web logs, city and oblast Akims, obtained within the monitoring of informational realm of the Company

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								<p>in external environment;</p> <ul style="list-style-type: none"> - the consumers’ claims, related to insufficient heat supply, are being received by the phone or in written form; - researches are conducted, on the base of which adjustment actions, acts are made, and the database is maintained; -prior to the beginning of the project on modernization and reconstruction of heat networks ,public hearings are being conducted, involving mass media (local TV channels), and being covered by local press; - heat cutting schedule is being placed on information boards in resident buildings; - for the period of heating networks reconstruction, the program on temporary transfer of consumers from those thermal power supply sources, which are bound to the heating network site being under reconstruction; <p>“CAEPCO” JSC received 64144 claims from consumers, 773 of them were complaints; 383 complaints were addressed via the “trust line”. All claims and complaints are considered, appropriate responses sent, negative consequences eliminated.</p>
4	<p>Management systems – ISO, Occupational Health and Safety Management OHSAS, Environmental management and audit (EMAS)</p> <p>Recertification processes should be performed on time in CAEPCO</p>	<p>Ensure that best practice is adopted across the organization. External certification of the ISO 14001 and OHSAS 18801 compliance secures liabilities to the third parties and guarantees continual improvement.</p>	<p>Best practice and EBRD requirements</p>	<p>Internal resources</p>	<p>2013, then as each certificate expires</p>	<p>Subsidiary companies’ ISO 14001 and OHSAS 18001 certification.</p> <p>For the holding company – ISO 9001 in 2014 and ISO 14001</p>	<p>Certification process has been completed in respect of all companies. It is important that management systems in subsidiaries were appropriately supported. Due to significant employees’ rotation (between working places), it is crucial to make investments in the</p>	<p>The works on the preparation of "CAEPCO" JSC for certification according to ISO 9001 "Quality Management System" has begun.</p> <p>In preparing for introduction of management standards ISO 9001 and ISO 14001 at the management holding "CAEPCO" JSC was held a series of consultations with companies that provide services for audit and certification, as well as studying the experience of Kazakhstan companies (in terms of certification) with similar structure management "CAEPCO" JSC, such as "Samruk-Energo" JSC, "Kazatomprom" JSC and others. Based practice of the above companies, organizations do not have their own production assets, which are separate legal entities, which include</p>

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	<p>subsidiaries.</p> <p>CAEPCO (holding company) to be certified in the 2nd quarter of 2014</p> <p>Implement training programs for the personnel on corporate environment, health protection and safety issues</p>					by 2015.	<p>corporate environment, health protection and safety educational programs.</p>	<p>controlling stakes in their subsidiaries, and that through this exercise general supervision by them, usually are certified only in accordance with ISO 9001 "Quality Management System" and their subsidiaries in all the required standards of the integrated management system (IMS). Based on the foregoing and considering that all subsidiaries of "CAEPCO" JSC introduced ISO standards (9001,14001,18001 etc.) and that offices of the company are not considered as hazardous industrial facilities and others, this paragraph was not performed for its exclusion until the appeal to EBRD. Appeal to the EBRD is planned at 1st quarter 2016.</p> <p>In order to maintain the efficient management system in subsidiaries, the Company allocates funds in training programs on the corporate environment, health protection and safety issues.</p> <p>"CAEPCO" JSC had 3 ecologists trained, including 1 employee of the Department of Ecology, Safety and Labor protection of the "CAEPCO" JSC, by topic "Internal Auditor" and "Introduction to Risk Management» (ISO 31000: 2009) and 2 employees of the "PE" JSC by topic "Environmental monitoring and control. Environmental reporting. Environmental audit"and "Development of GHG management and trading systems in the Republic of Kazakhstan. Practice of environmental management (assessment, approval, licensing)" (costs made 295 thousand tenge)</p> <p>In 2015, 6235 employees undertook training at the "PE" JSC, "Tehnadzor" LLP's, MSPE "Petrovavlovsk Humanities College" Named by M. Zhumabaeva and "</p>

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								<p>PozhSistemService” LLP training centers: on labor safety – 490, industrial safety – 4158, professional skills upgrading – 258, certification and training – 1329. Total costs made 21 674.46 thousand tenge.</p> <p>The Company’s entities annually undergo re-certification audits of the integrated management systems compliance.</p>
5	<p>Prepare a formal environmental and social impact assessment (ESIA) for all future development projects that fall within Annex 1 of EU EIA Directive (i.e. new high-voltage lines above 110 kV 10 km, any new boiler units above 300 MW, any ash dump above 25 ha).</p> <p>ESIA for new ash dumps should include complete wastes analysis with respect to mercury and other heavy metals concentration in them.</p>	<p>To ensure that the initiated projects have minimum environmental impact. The environmental and social impact assessment guarantees all issues to be negotiated, any project to comply with the European technologies standards and Kazakh law, and stakeholders to be engaged.</p>	Best practice and EBRD requirements	Internal resources	For all new investment activities - from 2 nd quarter of 2013	<p>ESIA report and publication of the Non-Technical Summary (NTS) on the Company’s web site.</p> <p>Submission to the Bank of the Non-Technical Summary copy.</p> <p>Place respective link in annual report.</p>	<p>The companies have been conducting EIA with the help of modernized facilities under the law of Kazakhstan. However, impact on soil and water resources should be assessed too, as well as issues on the soil degradation in wastes disposal areas concerned.</p>	<p>Non-technical summaries of the “PAVLODARENERGO” JSC’s investment projects are available on:</p> <p>http://www.pavlodarenergo.kz/ru/ekologiya/otchetnost.html</p> <p>“SEVKAZENERGO” JSC: http://www.sevkazenergo.kz/ru/ekologiya/otchetnost.html.</p> <p>For new investment activities, which implementation may directly affect the environment and citizens’ health, the “Environmental and social impact assessment” projects are developed and to be expertized by respective authority, issuing the environmental emission certificates. Information on the environmental impact assessment projects being expertized is normally published in mass media, in order to keep all stakeholders and community informed. Prior to environmental expertizing, the projects are discussed on public hearings. The environmental impact assessment covers assessment of impact on air, water, soil, subsoil, plant and animal life. In 2015, the “CAEPCO” JSC developed 3 new investment activities.</p> <p>“PAVLODARENERGO” JSC In 2015, the company developed 3 investment projects, and</p>

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								obtained environmental expertise conclusions on the following environmental impact assessment projects: - Installation of turbine unit №2 of PT-65/75-130-13 CHP-3 (environmental expert conclusion # KZ34VCY00019260 dated 17.03.2015); -Installation chimney №2 on CHP-3 (environmental expert conclusion #KZ86VCY00019488 dated 03.04.2015); - the T-100,120-130-3 type turbo generators reconstruction at the CHP-3’s station # 4, “PAVLODARENERGO” JSC’s S 01-0018/15 dated 11.09.2015).
6	Integrate respective certified systems of continuous emission monitoring system (CEMS) at all emitting facilities, working on coal. The system should cover monitoring and control in real time operation mode, and electronic data storage.	Ensure that distributed data is reliable and based on trustworthy independent systems.	Best practice and EBRD requirements		2015	Submit data on implementation and average results for each station and boiler in annual 2014 report.	CEMS devices were installed only on a few facilities. The company needs the program to be implemented in full scope, and all records to be available.	<p>“PAVLODARENERGO” JSC Stationary device for automatic control over pollutant substances concentration in flue gases (SIEMENS) was installed. It serves for continuous measurements of SO_x, NO_x, CO, dust and fuel gases at all CHP-2 and CHP-3 boiler units, and therefore for the personnel’s ability to response promptly the equipment operational mode change, i.e. take appropriate measures on pollutant substances concentration, make the fuel combust to the full extent, increase the ash removal units’ efficiency.</p> <p>“SEVKAZENERGO” JSC Special device for measuring nitrogen, sulfur, carbon oxides was installed at all boilers for the purpose of control over the atmosphere emissions. These systems are operated in operating mode</p>
7	Ensure that all new projects, extensions, attributed to stations and common infrastructures are being engineered in	To ensure that future projects minimize environmental impacts. The assessment at	Best practice and EBRD	Will vary for different projects	CHPs: On-going Distribution companies:	Provide respective details on any new station.	All new boilers at new stations, for which building permit is to be attained after 1st January 2015, will be	“PAVLODARENERGO”, JSC completed installation of battery emulsifiers on all boiler units of CHP-3, ECHP, and CHP-2. The installation of emulsifiers made it possible to reach the level of emissions, required by the Technical Regulations. Actual annual average data for 2015 on ash

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	<p>compliance with Kazakh environmental regulations and aim on EU standards, particularly on EU IED directives.</p> <p>Any land, which hasn't been used for construction purposes before, should comply with the BAT IED emissions requirements.</p> <p>Any changes should serve for the BAT on dust, SOx and NOx compliance.</p> <p>Reach the average dust emission level at all stations below 300 mg/Nm³ by 2016.</p> <p>Long-term action plan, aiming on reaching the emission level of below 100 mg/Nm³, should be developed as part of BAT Assessment in 2023.</p>	<p>development stage will ensure that any project complies with European BAT, stakeholders' requirements and Kazakh law.</p> <p>Kazakh standards for existing stations are quite high, so their emissions level should be decreased to below 300 mg/Nm³ by 2016.</p> <p>Develop long-term program for further dust reduction.</p>	<p>requirements</p> <p>EBRD</p> <p>EU</p>	CAPEX	starting from 2011, all new heat transmission pipelines should meet EU energy efficiency standards (pre-isolated tubes, etc.).	<p>Annual report design, permitted plus minimum emissions volume to be reached.</p> <p>In 2015, submit report on dust reduction in 2013 down to 100 mg/Nm³.</p>	<p>engineered in accordance with the EU directives for big fuel-combustion facilities on existing stations (dust – 50 mg/nm³, SOx – 800-2400 mg/nm³), depending on the boiler size.</p> <p>Any land, which hasn't been used for construction purposes before, or block generating more than 100 Mw of heat energy, after 2013 should be engineered in conformity with IED, and aimed on reaching the 300 mg/Nm³-dust, 200-250 mg/Nm³-Nox, 150 mg/Nm³-Sox emissions level.</p>	<p>emissions are equal to 319 mg/nm³, SOx– 980 mg/nm³, NOx– 459 mg/nm³.</p> <p>“SEVKAZENERGO” JSC completed the installation of battery emulsifiers on all boiler units. Actual annual average data for 2015 on ash emissions are equal to 284 mg/nm³, SOx emissions – 1781 mg/nm³, NOx emissions – 453 mg/nm³.</p> <p>“Pavlodar Heating Networks” LLP</p> <p>All works on the heating networks construction and reconstruction are performed under the projects developed. The projects undergo the government environmental expertise and are negotiated with stakeholders. Working projects stipulate activities on labor, fire safety, and environmental protection. In order the subcontractors to conform with the law requirements on occupational health, labor, fire and environmental safety, decree was adopted, requiring respective terms to be covered by the contracts.</p> <p>All inventories acquired should conform with GOST, whereas subcontractors, involved in construction and reconstruction, should have respective licence. They are mandatory requirements imposed on subcontractors and works (services) suppliers.</p> <p>Reconstruction of thermal transmission facilities involves using pre-insulated pipelines. This project's economical effect is presented by the heat losses decrease on reconstructed sites, thermal energy sales gain, as well as lack of necessity for renewing the heat-insulating installations within the pipeline lifecycle.</p>

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8	<p>On any investments in modernization or new construction of the fuel oil storage sites, the BAT requirements should be observed, as well as regulations on soil and water protection from pollutant substances’ leakage, and infection.</p> <p>Integrate continuous control system on all fuel oil storage areas, where the oil concentration exceeds 50 mg/mn3.</p> <p>Classify the sites on the basis of the soil contamination risks level.</p>	<p>The procedure of preventing the soil infection risks (which will be also the part of the ISO set of activities) should be integrated.</p>	<p>Best practice and EBRD requirements</p>		<p>3st quarter of 2013 – tender on the detailed assessment of the risks, related to the big fuel oil storage areas</p> <p>2nd quarter of 2014 – the assessment results to be submitted to the company</p> <p>3rd quarter of 2014 – selecting sites to be restored in the future</p>	<p>Submit new policy in accordance with ISO certificates, negotiate on the site clean-up plan.</p>	<p>Some works on the soil cleaning from pollutant substances were performed in 2011 (104 mg of soil in Petropavlovsk CHP). In all CAEPCO’s entities respective procedure must be implemented on preventing any liabilities, arising from the soil contamination.</p> <p>In respect of the sites of the highest soil contamination level respective remediation plans must be developed.</p>	<p>“PAVLODARENERGO” JSC</p> <p>The company proceeds with its activities on improving physical conditions of the fuel oil storage sites at CHPs for the purpose of reducing environmental negative impact and preventing the fuel oil leakage. Examination of the equipment, buildings and facilities of the fuel oil pumping stations is performed regularly; respective measure are undertaken upon the examination results (repair, tanks cleaning, containers dyeing, containment renewal, etc.). The Production ecological control program for 2015-2019 was developed and negotiated with respective authorities. It stipulates production monitoring for obtaining environmental quality target indicators (control over underground waters and soils pollution). The environment components were monitored by certified laboratories – the “Provservis-Otan” LLP, “KazPII “Kazakhstanproject” LLP. No oil products exceeding was detected.</p> <p>The “PRDC” JSC’s environmental impact is monitored within the Production environmental control program. Activities on preventing environmental damage, resulting from transformer oils, were implemented.</p> <p>“SEVKAZENERGO” JSC</p> <p>Work is underway to improve the physical condition of areas for the storage of fuel oil on CHP in order to reduce the negative impact to environment and for exception, an oil leaks in emergency. Regularly conducted a survey of technical state of equipment, buildings and facilities of fuel oil pumping stations after the results the corresponding measures are taken (repairs, cleaning reservoirs, paint bins, update embankment, etc.).The program of industrial environmental monitoring (EMP) to 2014-2016 are developed and approved by the authorized bodies, within the</p>

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								framework of program is being industrial monitoring for targeted environmental quality (control of pollution of groundwater, soils). According to the results of sampling testing laboratory for environmental monitoring of “SEVKAZENERGO” JSC in the soil (16.09.2016) maximum permissible concentration is not detected.
9	In 2014, develop the program for assessing the level of NOx and SOx emissions decrease, and respective directives on big fuel combusting units (to the possible extent), with significantly more severe restrictions on dust emissions, starting from 2018 (phase 1).	The EBRD requires that all new generating assets meet new stations standards, as it is required by the EU Directive on big fuel combusting units. Existing stations must at least comply with Kazakh standards; it is also required for the entities to develop plans on implementing existing standards for stations, as it is mentioned in explanatory notes on the EU Directive on big fuel combusting units. Current emissions level exceeds the European	Best practice and EBRD requirements	Internal resources	CHP-3: To develop plan in 2014 and submit it to the shareholders and EBRD. Implement phase 1 by 2018, phase 2 – by 2023.	Submission of the report to the EBRD representatives, and further publication of the summary.	BAT assessment was performed at Pavlodar and Petropavlovsk CHPs by the local consultant. Program should be developed in cooperation with respective authorities as a part of the entire environmental strategy (in the context of the “Kazakhstan-2050” Strategy)	“PAVLODARENERGO” JSC Plan on reducing NOx, SOx and ash emissions within the period of 2015-2019 was developed. According to the “PE” JSC’s Investment program for 2016-2020, technical-economical feasibility (TEF) on selecting the sulfur removing facility will be developed in 2019 in cooperation with a project institute. It will justify selection of a certain type of the sulfur extraction (wet, dry, semidry). After the TEF is developed, decision on installation of selected mode of sulfur removal on boilers will be taken, as well as schedule of gas emissions reduction developed on each CHP. “SEVKAZENERGO» JSC Program on assessing the level of NOx, SOx and ash emissions decrease for 2014-2020 was developed in accordance with the «SKE» JSC's Investment program.

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		standards, and does not comply with regulations of the Republic of Kazakhstan.						
10	In all CHP: Stop purchase of asbestos containing products in Petropavlovsk, starting from the end of 2014. Not to revert to any kind of asbestos usage on any other sites.	Improved environmental and occupational health management. Asbestos is presented at CHPs.	Best practice and EBRD requirements	Consulting costs/ internal costs	In 2014 – stop purchasing asbestos by all sites.	Independent report by the 4 th quarter of 2014	On-going usage of asbestos in Petropavlovsk should be terminated by 2014. This company is currently using asbestos within modernization operations (around 60 mg per year). The plan on asbestos removal and disposal in Petropavlovsk by the 2 nd quarter of 2013 should be developed. High-risk asbestos using areas should be liquidated by 2020. In Pavlodar, asbestos are not used anymore. Nevertheless, there are still high quantities of asbestos materials at the site, and measures	“PAVLODARENERGO” JSC Since 2010, the asbestos materials are not purchased. Programs (schedules) for any CHP on replacing asbestos-perlite equipment units by basaltic ones, as well as their disposal, are implemented to the full extent. Non-asbestos materials the brand of VATI is make purchased. “SEVKAZENERGO” JSC Plan on asbestos treatment (extraction, removal and disposal), as well as the disposal locations’ restoration, are implemented to the full extent under Decree “On implementation of Environmental and social action plan”. Since 01 January 2014, the asbestos containing products are never purchased, the company is currently using environmental insulator – “Vermizol” compacting plaster. In order to fulfill the assumed environmental and social commitments in 2015 “SEVKAZENERGO” JSC concluded some of contracts for the supply the sealing plaster “Vermizol” (450 m ³).

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							should be undertaken on their disposal.	
11	In all CHPs: Through analysis detect whether transformer oil contains any PCBs.	Transformer oil, containing PCB, is acceptable till its useful time expires. Nevertheless, long-term plans on their termination should be developed.	Best practice and EBRD requirements	Consulting costs	2015	Results of analysis	Submit updated annual report	<p>At all the Company’s entities, in the oil (oil containing equipment) purchase process, suppliers are to submit certificate on their products (equipment) containing no polychlorinated biphenyls.</p> <p>“PAVLODARENERGO” JSC In compliance with environmental law requirements in the Republic of Kazakhstan, oil-containing equipment was inventoried; oil-containing equipment samples were analyzed by the certified laboratory concerning PCBs. Tests proved all samples to contain less than 50 mg/kg of PCBs.</p> <p>“SEVKAZENERGO” JSC Agreement with the "EKOEKSPERT" LLP on conducting samples analysis in independent certified laboratory concerning PCBs in electric equipment oils, was concluded; oil containing equipment was inventoried. No PCBs were detected.</p>
12	In all CHP: Recalculate the provisions for future closure and restoration of ash dumps.	Company should have transparent information on its future environmental protection liabilities.	Best practice	Consulting costs	4th quarter of 2013, for CHPs – 2014.	Report, containing calculations, submitted to EBRD	For each ash dump, estimated costs of its closure and restoration (including soil transportation and planting) should be calculated.	<p>“PAVLODARENERGO” JSC According to design and estimate documents on the “Construction of section # 2 of the ash dump on the Tuz lakebed” Project (ECHP), developed by the “KazNIPIEnergoprom” Institute” JSC, conservation of section # 5 of the old ash dump (80,845 thousand tenge) and section # 1 of the ash dump currently in use (425,698 thousand tenge) is intended. Costs of restoration of line # 1-ash dump of CHP-3 under to the working project make 560,856 thousand tenge.</p>

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								<p>In 2015, the work of recultivation of the 1st stage of ash dump CHP-3 was completed. Project for recultivation of the 1st stage of ash dump of CHP-2 is submitted to the state expertise, recultivation make 264358,62 thousand tenge . Recultivation is intended to 2016.</p> <p>“SEVKAZENERGO” JSC “SEVKAZENERGO” JSC for conform to environmental requirements Republic of Kazakhstan are started recultivation the before of spent ash dump №3, which aims to prevent surface dusting on washing ash in section of waste. During carrying out this recultivation provided the 2 stage: technical and biological. In 2015, recultivation area amounted 32.8 hectares. Works of recultivation implemented on the basis of the concluded agreement.</p> <p>For execution of this event was received a permit for emissions into the environment № KZ79VDD00033585 dated 08.10.15 valid from 2015 to 2018. All stage of recultivation ash dump #3 “SEVKAZENERGO” JSC will finish by 2018.</p>

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13	Develop social program for co-financing of the employees’ long-term housing (apartments and hotels)	Severe personnel fluctuations due to low wages and housing problems	Best practice	1 million Euro per year in the period of 2015-2020	3rd quarter of 2014	Report	The labor market competitiveness is in need of significant raise. Construction of several apartment houses is recommended, which can serve for preventing the personnel turnover, and staffing the Company with employees of at least 5-8-year professional experience.	<p>“PAVLODARENERGO” JSC The company developed Regulations on providing to the “PE” JSC’s employees interest-free loans for procurement of apartments in the building, in which construction the Company had participated. Interest-free loans in the amount of 25% of the total apartment cost were granted to 20 high-qualified specialists of more than 5-year professional experience, who are subjected to obligatory working for the Company for 5 years since the moment of getting the loan. After questionnaire survey of employees received the information about need to improve housing conditions. On a balance sheet of “PREDC” JSC have 4 apartments for employees of PDN.</p> <p>“SEVKAZENERGO” JSC The company has on its books 1 dormitory and 18 apartments for its employees in Petropavlovsk. The employees were interviewed, information on their needs for the housing conditions improvement was obtained; optimal measures on housing conditions. In order to implement the social program to ensure co-financing of an apartment or long term accommodation in hostels for employees of company. At “SEVKAZENERGO” JSC was written the Regulation to provide apartments of “SEVKAZENERGO” JSC RG 12.6.005 /02-dated 21.04.2015.</p>
14	Assess the environmental impact of facilities in operation – conduct the heavy metals coal quality additional independent analysis	New European Directives on Ni, Hg, As and other heavy metals emissions; the way of the issue settlement is	Best practice		In 2014, the company should carry out independent analysis for mercury and	Submit information within the annual report	Thorough analysis of mercury, arsenic, fluoride and heavy metals content in coal should be done. Environmental impact should be analyzed with	<p>“PAVLODARENERGO” JSC As both the “SEVKAZENERGO” and “PAVLODARENERGO” JSCs’ CHPs use coal from the Ekibastuz mine, the “SEVKAZENERGO” JSC’s analyses results can be relied on by the “PAVLODARENERGO” JSC.</p> <p>“SEVKAZENERGO” JSC In accordance with the Environmental Monitoring Program,</p>

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		determined.			other metals		this regard.	analysis of the mercury, arsenic, fluoride and heavy metals concentration in coal ash (08.10.2015), as well as collection of samples of underground waters (14.09.2015 and 29.09.2015) and soil mantle (15.09.2015 and 16.09.2015), were performed by the “Tsentrgeolanalit” LLP testing center. No norms are exceeded.
15	All CHPs: Develop standards on storm run-offs and sewage waters on-site management on the basis of the best practice.	Storm run-offs and sewage waters management improvement, setting international standards and goals on their achievement. Securing step-by-step approach to the best practice integration.	Best practice	Internal costs	2014	Policies publication. Upgraded data in the report		<p>“PAVLODARENERGO” JSC In order to improve storm run-offs and sewage waters management on the company's sites, the “Reconstruction of the “Pavlodar Carton Ruberoid Plant” JSC’s canalization collector’s black water sewage till the “PAVLODARENERGO” JSC’s CHP-3’s pumping station” Project was developed. Environmental control programs for the period of 2015-2019 were developed (CHP-2, CHP-3, ECHP), aimed on obtaining target indicators on the environmental conditions and instruments for regulating production processes, potentially having impact on environment. Laboratory control over the discharge waters quality is covered by the program. It is performed by the special certified organization under the contract, in compliance with the methods, included in the Measuring Methods Register of the Republic of Kazakhstan. At the “PE” JSC’s entities, were developed production guidelines on preventing the black water canalization plugging and obstructions removal, regulations on storm run-offs and water sewage management, guidelines on operating the pumping stations of the pollution control facilities of division # 12 of CHP-2 and CHP-3, guidelines on operating pumping station of industrial run-offs facilities of division # 12 of CHP-2 and CHP-3.</p> <p>“SEVKAZENERGO” JSC In order to the run-offs and water sewage management improvement, the company developed Plan on reducing</p>

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								disposals to the hydro-ash-removal channel dated 09.12.2014, as well as Program on production environmental control, aimed on obtaining target indicators on the environmental conditions and instruments for regulating production processes, potentially having impact on environment. Laboratory control over the discharge waters quality is covered by the program. Under the plan of measures for decrease the discharges water to channel of hydraulic ash removal in "SKE" LLP do following measures: - installed oil removers on industrial stormwater station №1 - researched the pressure collector on industrial stormwater station №1 for detected the loaded place. - in installation for clean a heavy oiled and oiled drains was increased productivity - the drainage of expander intermittent blowdown of 1st stage on boiler shop was transferred to an industrial stormwater sewers
16	Improve occupational health and safety (OHS) management, including as minimum: enforcement of wearing of required personal protection gear, respective training of new and transferred personnel, proper and precautionary signage of hazardous areas, implementation of noise abatement techniques, especially for furnaces, provision of first aid kits, enforcement of subcontractors obligations	Improved healthy and safety management. Decrease in number of incidents. Decrease occupational diseases rate.	Legal compliance and reduced risk of accidents	Internal costs	2013	Improved management practices. List of implemented decisions on the employees' protection. Internal review records.	Inspection protocols indicated shortcomings with regard to working conditions. Several heavy accidents occurred in 2012.	<p>"PAVLODARENERGO" JSC In "PAVLODARENERGO" JSC was written 11 internal documents to improve the quality of management in a field of industrial health and safety (H&S), it's including the next documents: documented procedures (DP) – 4, instructions – 5, regulations – 2.</p> <p>"SEVKAZENERGO" JSC In order to labor protection and safety management improvement, the "SKE" JSC developed/rethink 9 internal regulating documents: 1.RG 19.200.2015 Regulation about the procedure for medical examination employees of CHP-2 of "SEVKAZENERGO" JSC; 2.RG 19.013 / 02 Regulation for the proficiency testing of knowledge in the field of occupational health and safety, technical operation of power stations and networks, rendering</p>

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	related to OHS, and visits to the families of the workers having participated in heavy accidents in the last 3 years.							<p>first aid to the victims, fire safety, special regulations; 3.RG 19.020 / 02 Regulation on the investigation and accounting of accidents at the enterprises of the "SEVKAZENERGO" JSC group; 4.IMS 04.05/02 Hazards and Risks 5.HS/02 Guide to management of occupational safety and health; 6.IMS 06.06/01 Guidance for occupational safety and health management; 7.RG 03.038 / 01 Regulation about compliance the basic safety requirements, occupational health, industrial safety, fire safety, sanitary norms and environmental legislation on the territory of "North Kazakhstan Electric Distribution Company" JSC; 8.RG 03.046 Regulation about investigation and accounting of technological failures and other damage on power equipment of electrical networks of "North Kazakhstan Electric Distribution Company" JSC; 9.RG 09.02 / 01 Regulation for the control of ensure employees with quality clothing, footwear and personal protective equipment required size, soap and milk. The Company's entities provide their employees with working clothing, safety shoes, personal protective gear in accordance with the law of the Republic of Kazakhstan. Independent experts are involved in the heating networks construction procedures in order to inspect utility networks, technological equipment, as well as bearing and enclosing structures. Safety signs are procured annually (restrictive, warning, mandatory, indicating ones) for production locations, where safety issues are relevant. Individuals without required professional education and/or experience are educated in the field appropriate mode. For timely and effective provision of first aid, all production</p>

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								locations are provided with first-aid kits and posters with graphically illustrating the rules of providing first-aid; employees are annually trained on first aid methods. The declaration on industrial safety is observed. Fire and accidents prevention training programs are implemented on a regular basis. All employees are properly instructed, educated, re-trained, and tested on industrial and labor safety issues. Safety Days are celebrated every week/month. The occupational health and labor safety legal base is actualized on a daily basis, responsible officials are kept informed. Safety inspectors and engineer technicians visit workplaces; the inspections results are recorded in Operating register, Defect register and Workplaces inspection register. Accidents are registered, as well as introductory briefing events. Inclusion of the penalties for the subcontractors' violation of sanitary and epidemiological, environmental protection, fire and labor safety regulations in the contracts is negotiated.
17	Implement the requirements of the inspection orders.	Numerous issues related to environmental compliance	Environmental law	Internal costs	As required by the inspection protocols	Submit information on fulfillment to the inspecting authority. Report to the Bank on implementation status within the annual report	The entities are annually subjected to inspections run by the local institutions on industrial, labor and environmental safety compliance. Different types of shortcomings are traditionally detected, i.e. in respect of water sewage, air emissions, improper wastes management, littering, etc.	<p>“PAVLODARENERGO” JSC In 2015 Government authorities conducted no inspections.</p> <p>“SEVKAZENERGO” JSC Government authorities conducted 2 inspections, "Department of Ecology on North Kazakhstan Area of Committee of Environmental Regulation, control and state inspection in oil and gas complex of the Ministry of Energy of the Republic of Kazakhstan" Republican Government Institution (held unscheduled inspection of environmental activities in "SEVKAZENERGO" JSC) and “Esil basin inspection” Republican Government Institution held unscheduled inspection for compliance with the Water Code of the Republic of Kazakhstan (Regulation of use the water resources and their protection). 1 acts and 2 notices were</p>

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								issued. All violations were corrected on time to the full extent. In "North Kazakhstan Electric Distribution Company" JSC and "Pavlodar heating networks" LLP Government authorities conducted no inspections.
18	As part of EHS management system, create the EHS team within the CAEPCO corporate structure, and assign the occupational health and safety manager. This group should be represented by all stations' occupational health and safety top-managers, and be a part of the Company's formal structure. The team should settle relevant	Improvement of the Company's environmental management.	Best practice	Internal resources	2013	Report to the Bank, inclosed to the annual report.	There is no environmental department in the Company (corporate environmental department). At each station, responsibility on different environmental aspects is divided between certain officials.	“CAEPCO” JSC has Production and Technical Department, having the Environment, Safety and Labor Protection division included. The subsidiaries' environmental activities are supervised by the Head of the division and its Chief Ecologist, having 17 environmental specialists under his responsibility. The occupational health, safety and labor protection group was created; it is presented by the environmental divisions' heads, and works on relevant environmental issues settlement, as well as development of reports to EBRD.

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	environmental issues, develop efficient approaches to the Company’s performance in terms of environmental impact, report to EBRD on occupational health and safety activities.							
19	<p>Development of the Environmental Occupational Health and Safety Procedures for Construction Works (construction companies, including subcontractors), defining: safety measures, accidents and emergency prevention and response, evaluation, feedback, reporting, personnel training, etc.</p> <p>Supervision of construction works by environmental and industrial safety specialist</p>	<p>Definition of clear responsibilities for constructors. Ensure that all employees are aware of environmental requirements, activities guidelines, surface and underground waters protection issues, solid wastes treatment, etc.</p> <p>Prevention of construction injuries, child labor etc.</p>	<p>Best practice.</p> <p>Environmental, industrial safety and labor protection requirements</p>	Time, spent on managing, or external experts’ fees	Before the beginning of construction, then - continuously.	Procedures are developed. Training programs are implemented. Reports are submitted to the project manager.	<p>Company has already implemented a number of occupational safety standards. However they cover day-to-day activities, rather than investment ones.</p>	<p>The Company developed the “Guidelines on organization and conducting works on the subsidiaries’ territories by subcontractors” and “Regulations on general labor protection, industrial, fire safety, sanitary norms and legal environmental requirements to be followed on the subsidiaries’ territories”, which identify the order of executing works on investment activities. The Company included the main requirements on quality, energy management, occupational health and safety, environmental protection, metering and testing works into the agreements with subcontractors.</p> <p>Within the implementation of OHSAS 18001, the Company developed the lists of dangers, and identified the risk levels for subcontractors. Subcontractors are supervised according to the schedule; in case of any contract provisions violation, Act of inspection is issued. Construction works are supervised by the ecologist and industrial safety specialist.</p>

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20	Ensure that location and technical specifications of new wastes burial areas will meet best technologies requirements and rely on the local environmental and underground waters conditions. Creation of new wastes burial sites should be preceded by environmental and hydrogeological analysis, subjected to the environmental impact assessment procedure.	To ensure that future projects minimize environmental impacts	Best practice and European requirements	Internal resources	2013 – future projects When new wastes burial locations are needed	Report to EBRD		Prior to the implementation of actions within the EBRD loan, (ready design and estimate documentation), including all sections of the environmental assessment impact reports under the law of the Republic of Kazakhstan, the Company undergoes government environmental expertise. Only upon obtaining positive environmental expert conclusions, the projects are brought on stream. Among the requirements of the technical task upon the projects development, the Company focuses on demands for developing technical measures on reducing emissions and hazardous substances disposal to environment. During the construction a new ash dumps maps uses the latest technology of impervious screen in the bed of ash dump - Canadian polysynthetic geomembrane. The use of a special film - geomembrane, will ensure 100% waterproof. This reliable and durable impervious screen, providing protection of soil and groundwater contamination from the groundwater at the expense of chemical components contained in the clarified water recycled hydraulic ash removal system (HAR). The entities' production activities' wastes are disposed to appropriate locations or utilized by respective contractors under agreements.
Petropavlovsk CHP								
21	Reduce the risk of contamination of the Beloye lake with oil-containing water	Develop procedure for sampling, and install preventative facilities (oil collectors) to reduce the risk of accidental oil leakage to the Beloye lake. As an	Best practice	Own resources	2014	Certificates copies and data on water sewage quality, submitted to	The Company faces some problems related to reducing contamination, resulting from the water discharged to the Beloye lake and Ishim river. Permissible	In the course of 2015, wastes waters were not collected from the Beloye lake, nor Ishim river. The Ishim river was not polluted by the “SKE” JSC’s oil-containing wastes waters.

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		alternative, divide the Beloye lake into cooling pond (app. 10% of the lake area) and the rest of the lake.				the Bank.	pollutant substances concentration in disposed waters is exceeded, whereas particular substances are not listed in the certificate.	
22	Develop plan on reducing the greenhouse gases emissions for as per 1 mW for 2014-2020. Evaluate further activities on the energy consumption efficiency increase.	Efficient energy consumption efficiency and lower fuel consumption as per 1 mW-h will result in decreased CO ₂ emissions.	Best practice and EBRD requirements	Internal resources	1st quarter of 2014	Publication of plan on reducing the greenhouse gases emissions	The current investment program is aimed on improving generating efficiency of CHP-3 and CHP-2, and thereby reducing CO ₂ emissions. It will be the part of the entire program on the CO ₂ emissions limits and emissions trade within the new Kazakh law.	Plan on reducing greenhouse gases emissions as per 1 MW for 2014-2020 is developed. According to approved Plan in 2015 "SEVKAZENERGO" JSC were carried out the following activities: - Replacement a pumps of condensate on turbine unit №1; - Replacement the brass tube of LPH-2 on turbine unit №7; - Replacement the turbine unit №1.
23	Perform the review of the feasibility of the use of the European best available technology reference documents (BREF) related to improvement of the open cooling system in Petropavlovsk.	To ensure that future projects minimize environmental impacts.	Best practice and European requirements	Internal resources	2014	Report to EBRD	This open-cooling system is not in full compliance with BREF (December 2001) for industrial cooling operations. The program for upgrade should be discussed internally and with respective	According to the set-up projects data, as well as that of technological process of the turbo generators' condensers cooling, no any other technologies for the water delivery to the stations territory are available.

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							authorities.	
PAVLODARENERGO CHP								
24	Develop plan on reducing the greenhouse gases emissions as per 1 Mw for 2014-2020. Evaluate further activities on the energy consumption efficiency increase.	Efficient energy consumption and lower fuel consumption as per 1 mW-h will result in decreased CO ₂ emissions.	Best practice and EBRD requirements	Internal resources	2014	Publication of plan on reducing the greenhouse gases emissions. Submit to EBRD data on each station's carbon emissions within the annual report. In 2015, include the chemical safety report data.	The current investment program is aimed on improving generating efficiency of CHP-3 and CHP-2, and thereby reducing CO ₂ emissions. It will be the part of the entire program on the CO ₂ emissions limits and emissions trade within the new Kazakh law.	Each CHP developed its Plan on reducing the greenhouse gases emissions for the period of implementation of the National plan on reducing greenhouse gases emissions for 2014-2020, as well as Plan on reducing the greenhouse gases emissions as per 1 Mw for 2014-2020.
25	Engineer cooling towers and systems in accordance with European BREF for cooling, dated December	To ensure that future projects minimize environmental impacts.	Best practice and European	1,300 million tenge. Included in the investment	2013	Report to EBRD	Electric power output during summertime is limited to 300MW due to insufficient capacity	“KazNIPIEnergoProm” JSC (Almaty) upon the order of the “PE” JSC developed the “Installation of the “PE” JSC’s CHP-3’s cooling tower # 5” Project. The project provides for cutting-edge cooling technology, i.e. usage of polymer

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	2001.		requirements	program.			of the cooling system. The company intends to construct the additional cooling tower in 2013 - 2014	irrigators, which complies with the best available technologies in accordance with the List of best available technologies, approved by the Decree of the Government of the Republic of Kazakhstan # 245 dated 12.03.2008. Within the process of choosing anti-corrosive materials for coolers, European practice was taken into consideration in compliance with EU directive “Integrated pollution prevention and control (IPPC), referenced document on best available technologies for big fuel-using facilities” (2010). The experience of usage of polymer irrigators proves them serving for: -improving the cooling effect by 2.0-2.5 C, or decreasing the height of irrigator by 1.0-1.5 m while saving the level of cooling; - adjusting the skeleton’s supporting structures’ weight to irrigator, based on polymeric irrigators’ weight. Cooling tower №5 of CHP #3 of “PE” JSC was commissioned in 2015.
Pavlodar Regional Electric Distribution Company, Petropavlovsk Electricity Distribution Company, Pavlodar and Ekibastuz Heat Distribution Companies, Petropavlovsk Heat Distribution Company								
26	For heat distribution companies: Prepare new program on the energy consumption efficiency improvement for 2014 - 2020.	Energy efficiency and lower fuel use per a square meter will result in this program implementation. This should include program on pre-insulated pipelines, appropriate heat meters installation, as well as program on thermo-vision photos of the assets for	Best practice and EBRD requirements.	Internal resources	4th quarter of 2013 – initial actions, program development, applying for the program and new tariffs approval by local authorities.	Publication of the energy saving program	The companies developed the “Improvement, reconstruction and restoration” program to reduce extra long losses during the period of 2010-2016. It includes schedule for replacement of heat insulation of mineral wool mats by foamed polyurethane insulation.	“Pavlodar Heating Networks” LLP Within the investment program, depreciation amounts, reconstruction of transit and internal heating networks with the use of pre-insulated pipeline was performed (3.2 km). Actual average losses in Pavlodar and Ekibastuz amounted to 29.5% which is 2.5% less than in 2014. “Petropavlovsk Heating Networks” LLP Within the investment program, in 2015 reconstruction of heat transit pipelines with the use of pre-insulated tubes (3.6 km), restoration of the transmission pipeline’s heat insulating facilities with the use of PU-foam cover (1.836 km). Actual average losses in Petropavlovsk amounted to 27.87% which

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		identification of heat losses.						is 2.81% less than last year.
27	Implementation of educational programs on environmental issues, focused on employees of less than 3-year work experience in the Company.	Due to frequent staff rotation, it is necessary employees to be additionally trained in respect of their performance complying with environmental requirements, as well as regulations on communicating with consumers in case of energy supply breakdown.	Best practice and EBRD requirements		2013/2014 - see comment	Contract for such training, or implementation by the Company itself; the programs participants' reports and knowledge control documents	In all stations the environmental management improvement activities were implemented, i.e. hiring an environmental engineer, ecologists training, developing environmental procedures within the ISO certification routine. Nevertheless, it seems that new employees haven't been trained at all.	<p>“Pavlodar Regional Electricity Distribution Company” JSC All new employees before starting the job duties informing about internal regulatory documents, containing to environmental requirements on the production.</p> <p>“North Kazakhstan Electric Distribution Company” JSC In 2015, in order to improve the company's personnel's environmental literacy, the following activities were implemented: the program on training on the environmental law compliance for employees of “NKEDC” JSC; environmental protection and safety issues are covered by the initial and regular training routine; the “Ecological Currier” newspaper is subscribed. Environmental engineer develops annual Environmental aspects register, List of environmental indicators, and Environmental management program, which are acknowledged by all employees in writing.</p> <p>“Pavlodar Heating Networks” LLP Leaders of SP is carried familiarization newly accepted employees with valid documents ISO 14001: 2004 and obtain the signature of them. Degree of educational level in environmental of protection, orientation and systems thinking in environmental safety culture is increased during operation.</p> <p>“Petropavlovsk Heating Networks” LLP The company subscribes the “Ecolog”, “Ecological Currier</p>

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								Int” newspapers. Personnel is regularly trained on environmental issues and integrated management systems subjects.
28	For electricity distribution companies: develop and coordinate with the local authorities the plan on proper heat power supply to the 1-category consumers	Due to severe climate conditions, the companies have to secure power supply. Some areas have only one power source, sometimes having the power delivered through worn-out electricity lines (more than 20-30 years old). Any serious breakdown at such line may cause significant social injury in winter.	Best practice	40 per company	4 rth quarter of 2013 - new report should be submitted, having inclosed 2013 regulations for the Company as a whole	Discussing results with tariffs-regulating authorities and local institutions	Limited inventory was developed in Petropavlovsk. Information on Pavlodar and Petropavlovsk is absent. The costs of supply from the second source should be covered by local authorities or management of the entity, entitled to dual supply (hospitals etc.). Due to the lack of funds, this issue is not solved in these cities.	<p>“Pavlodar Regional Electricity Distribution Company” JSC The company developed a plan on providing 1-category consumers with electric supply. The list of consumers, who do not correspond to the requirements, is developed. The issue of supplying electricity to them is currently negotiated with local authorities.</p> <p>“North-Kazakhstan Electric Distribution Company” JSC Within the service area of “NKEDC” JSC defined 143 objects (decision of Head of Administration in North Kazakhstan area №28 dated 15.09.2010 “On approving the list of continuous power supply the objects in North Kazakhstan area” “Energy management and Utility and Housing in North Kazakhstan area” Government institution developed and approved schedule for gradual activities on electric power supply to the 1-category consumers and emergency reserved quotas issuance. As of 05.02.2016, 16 consumers attained technical conditions on the 1-category of power supply reliability; 3 consumers completed technical conditions, emergency reserved quotas were not completed by all consumers. The “NKEDC” JSC applied to the city and oblast Akimats, as well as controlling</p>

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								authorities for the settlement of this issue.
29	Request for confirming documents (certificates, licenses) from the subcontractors, performing old transformers and equipment utilization.	Improved environmental, healthcare, labor protection management. Old electrical devices require special unitization procedures to be implemented.	Best practice	30	3 rd quarter of 2013 – see comment		According to the 2012 EHS report, the old transformers are repaired by the companies themselves. Mercury containing lamps are disposed by “special companies”. However it is not known whether they are certified for such services. No information on the other equipment utilization was provided.	<p>“North-Kazakhstan Electric Distribution Company” JSC and Pavlodar Regional Electric Distribution Company” JSC Transformers and equipment to be repaired under the inspection certificate are taken to the warehouses on the basis of the inventory voucher like reserve materials for the equipment being in operation. The non-effective transformers and other equipment are therefore not disposed to any third parties for utilization. Worked-out mercury-containing lamps are delivered on the basis of the agreements for their utilization to the special organizations: the “Polestar” LLP in Stepnogorsk (license # 1930-01/13-2447 dated 05.08.2013) and “ElectroTransReelto” LLP in Pavlodar (license #61/9250 dated 02.12.15)</p> <p>“Pavlodar Heating Networks” LLP Under the contract #9412.09 dated 07.09.2015 the worked-out mercury-containing lamps are delivered on the basis of the agreements for their utilization to the special organizations: the “ElectroTransReelto” LLP in Pavlodar According to the Law of RK №214-III dated 11.01.2007 "On licensing" with changes and additions as of 04.07.2013 a license to engage in this type of activity is not required.</p> <p>“Petropavlovsk Heating Networks” LLP The company does not practice the non-effective electric</p>

Corporate portfolio plan								
#	Action	Environmental risks / Liabilities / Benefits	Law requirements/ best practice	Invest-ment needs/ Resources (Euro, 000)	Schedule – when to be completed	Goal and evaluation criteria for successful completion	Comments	Report
								equipment utilization, as it is repaired (when possible). In case the equipment is beyond repair, it is written off and eventually delivered to the "NKEDC" JSC (for repair or further use of its pieces).

President

E.A. Amirkhanov

Vice-President on Production

O.V. Perfilov